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ORIGINAL ARTICLES.

INGUINAL COLOTOMY, WITH THE REPORT OF A CASE.[1]

BY ARCH DIXON, M.D.,
OF HENDERSON, KY.

ON June 19, 1890, I was requested by Dr. P. H. Griffin to examine a case of suspected fæcal impaction with consequent obstruction.

The patient, a man, aged twenty-two years, tall and spare, had a previous history of frequent and long-continued attacks of constipation, which yielded to treatment within a short time. On June 12th, Dr. Griffin was called to see him in one of these attacks, and found what he supposed to be a fæcal impaction in the sigmoid flexure. There was intense pain, radiating throughout the abdomen, and most marked in the left inguinal region. The usual remedies were prescribed, but without relief. On June 13th, in addition to calomel followed by castor oil, large enemata of hot water were used, which increased the pain and caused only a small discharge of fæcal matter. Opiates were given and purgatives administered each day with no relief, he having taken on the day previous to my first visit about a pint of castor oil and fully as much Epsom salt. I found him with a pulse of 140, temperature 102°, respiration 36; and with tympanites and general tenderness over the abdomen. Under a careful examination no tumor could be detected, but on passing the finger into the rectum a bulging of the bowel, with a teat-like protuberance extending below the sigmoid flexure, could be felt. The gut was entirely occluded. Dr. Griffin's attention was called to this fact, and colotomy was proposed as the only method of relief. The length of time which had elapsed since the obstruction began, nearly eight days, almost precluded the possibility of recovery, yet I deemed the operation a justifiable one if only to relieve pain. Dr. Griffin concurred in this opinion.

Two hours later, assisted by Drs. John Young Brown, P. H. Griffin, William A. Quinn, and medical student Arch Dixon, Jr., the operation was done. On making the usual incision the small intestine bulged through the opening, but was pushed back and retained by a flat sponge. Two fingers of the right hand were introduced, the rectum found and followed up to the sigmoid flexure, where a distinct tumor could be felt blocking the entire gut. Further examination by breaking adhesions and drawing the tumor through the incision, which had to be slightly enlarged, showed that the obstruction was due to volvulus at the sigmoid flexure. The gut was twisted upon itself and lapped over like the end of a tobacco "twist." Adhesions had formed and were so firm that the lumen of the bowel was entirely destroyed, a solid tumor remaining in its place. The intestine was intensely congested, dark and purple, and near the tumor was almost black. The questions of stitching the colon to the edges of the incision and immediately opening the gut, or of resecting the tumor, closing the rectum, dropping it back into the cavity and stitching the other cut end to the incision, at once presented themselves. At this juncture, in manipulating the tumor and testing the firmness of the adhesions, a slight tear was made in the gut immediately above the tumor, through which a small quantity of liquid fæcal matter escaped. This decided the question. The colon was immediately clamped above and below the tumor (phimosis forceps covered with rubber tubing being used as clamps) about two inches above and one inch and a half below the tumor. The rectal end of the intestine was first cut, its edges were turned in and stitched with Lembert sutures of fine silk, dusted with iodoform, and dropped back into the cavity. The same procedure was followed above, entirely removing the tumor. The cut edges of the colon were carefully stitched to the walls of the incision. Upon removing the clamp there was a gush of liquid fæcal matter through the opening, which continued for a short time. The abdominal cavity was irrigated with hot water through the opening left for the removal of the clamp and sponge, until the water returned clear and pure. The opening was then closed and a pad of iodoform-gauze was placed over the artificial anus, and covered with borated cotton, the dressing being retained by a many-tailed binder, the use of which was suggested by my friend, Dr. L. S. McMurtry. The patient was then put to bed with hot bottles around him.

Reaction was fairly good, and on the next morning the man expressed his thanks for the relief afforded him, he having had no pain since the operation. His condition, however, was not promising. Pulse 140, temperature 100°, and respiration 36. Abdominal tenderness was not marked, but there was a condition of exhaustion, which gradually increased until death took place at 9.50 P.M., June 20th, thirty-one hours after the operation.

In regard to the treatment of this case before I saw it, comment is unnecessary. The questions are, whether under the circumstances, the operation was a justifiable one, and whether resecting the gut, closing the rectal end and dropping it into the

[1] Read before the Mississippi Valley Medical Association, Louisville, Ky., October 9, 1890.

cavity, and the formation of an artificial anus at the incision, after the manner of Madelung, were to be preferred to stitching the colon to the walls of the incision and making an immediate opening into the gut without regard to the tumor formed by inflammatory adhesions. Taking everything into consideration, the almost gangrenous condition of the bowel at the site of the obstruction, the tear through which fæcal matter had escaped, the doubt that the wall of the gut would hold the stitches, and the fear of leaving a gangrenous tumor within the cavity, all of which were strong arguments in favor of the graver operation, I feel justified in the course pursued, even if nothing more was accomplished than relieving the patient from the terrible agony which he was suffering.

Some general remarks on the operation of colotomy may not be out of place here, especially as there seems to be a difference of opinion among surgeons in regard to the superiority of the two methods—*lumbar* and *inguinal*.

During the past decade the subject of colotomy, always one of interest, has received much attention from the surgical world. The revival of Littré's operation, so long debarred by the dread of opening the peritoneum, has made it necessary to compare the merits of the extra- (so-called) and intra-peritoneal methods. Littré, in 1710, first proposed to open the sigmoid flexure for the relief of imperforate anus in children, but there is a doubt as to his having peformed the operation. At all events, the operation seems to have been forgotten until revived by Pilloré, of Rouen, in 1776, who operated by a different method, opening the cæcum by an incision in the right inguinal region.

In 1796 Callisen suggested an operation whereby the colon might be entered without opening the peritoneal cavity. He experimented on the cadaver and endeavored to expose the bowel where it was not covered by peritoneum, by a vertical incision in the left lumbar region; failing in this, he made an attempt to carry out his idea on the living subject.

To Amussat unquestionably belongs the credit of having first performed the retro-peritoneal operation, which was done upon the right side through a transverse incision, with the result of five successes in six cases.

In this country, Ashmead, of Philadelphia, did a left lumbar retro-peritoneal colotomy in 1842, being unaware at the time of his operation of Callisen's proposal.[1]

Until recently the operation has usually been a combination of the methods of Callisen and Amussat. Like Callisen's, it was done on the left side; and like Amussat's, it was carried out through either a transverse or an obliquely transverse incision. The oblique incision, first recommended by Bryant, is now adopted by most surgeons.

Colotomy may be performed for any condition which obstructs the passage of the fæces through the colon, or under any circumstances in which it is advisable to place the bowel at rest. Obstruction may be produced by various causes, such as cancer of the rectum or sigmoid flexure, or of any other part of the colon; tumors of the peritoneum or of any abdominal organ, pressing on the bowel; volvulus of the sigmoid flexure, of the cæcum or of the ascending colon; and by fæcal accumulations and collections of foreign matter. Colotomy may be called for in cases of incurable ulceration of the bowel, however induced, if we have reason to believe that the irritation caused by the fæces and the movements of the intestinal walls contribute to the continuance of the disease, and also in cases of extreme dilatation, with atony of the colon, giving rise to frequent attacks of obstruction.

As a measure to ward off imminent death, colotomy is required in all cases of obstruction of the colon from whatever cause. For imperforate anus the operation holds a special position. It is intended to prevent impending death, and it may or may not be regarded as a cure for the disease. In many cases it is the first step in the process of cure. In every infant born with imperforate anus an operation in the anal region is first attempted; if this fails, colotomy is performed to prevent death. Later, an attempt may be made to cause the bowel to discharge through the anus. In a few words, it may be said that the indications to operate in any given case depend, in the first place, on the chance which the patient has to recover without operation; and, in the second place, upon the probability of success following the operation. To cases of acute obstruction of the sigmoid flexure, or elsewhere in the intestines, there is practically but one termination—death. No case of volvulus, whether of the large or the small intestine, has as yet been known to recover under purely medicinal treatment. Here, then, the indication is clear enough, as clear, Grieg Smith[1] says, as the indication in a case of bleeding from the carotid artery—operation.

But, in the case reported above, it may be said that while the patient had no chance of recovering without operation, yet there was no probability that success would follow the operation, owing to the length of time that the attack had lasted. But it was no fault of mine that the operation was not done sooner, and at the time of operating it was known that there was little, if any, chance of saving

[1] Greig Smith. Abdominal Surgery, second edition.

[1] Loc. cit.

life, but that relief from the intense pain was certain. It was under such conditions that the operation was proposed and consented to. It accomplished all that I expected, for, from the moment the patient came from under the influence of the anæsthetic until death took place, there was no pain.

Now as to the comparative merits of the two methods of operating. As I have said before, the operation of inguinal colotomy is not new; it was suggested one hundred and eighty years ago, but it was left to modern surgery to simplify the procedure, to lay down fixed rules for its performance, and to carry it almost certainly to a successful issue. The indications for its performance are the same as those for the lumbar method, which I am confident it will supersede. In a recent paper,[1] I find that so good a man as Dr. Mathews, the President of the Mississippi Valley Medical Association, in speaking of colotomy, uses the following language: "It is not the purpose of this paper to discuss the question *pro* or *con*, but it is safe to say, that with English and American surgeons, only one operation —lumbar colotomy—is looked upon as justifiable."

In view of the fact that such surgeons as Treves, Chavasse, Reeve, Kelsey, Cripps, the Allinghams, and others, advocate the *inguinal* in preference to the *lumbar* operation, this statement must be looked upon as rather sweeping. Dr. Mathews further says: "It does not seem at all plausible to say that with any method of operating, as much safety can be had in opening the peritoneum as in not opening it. If antiseptic surgery makes inguinal colotomy so very safe, why is it not logical to say that it also renders the lumbar operation doubly safe as compared with other ways."

Is it true that in the lumbar operation the peritoneum is never opened? On the contrary, is it not true that in a large majority of the cases the peritoneum *is opened?*

H. W. Allingham, Jr., in an interesting paper on the causes of failure to find the colon in the operation of lumbar colotomy, and the way to obviate them,[2] says:

"The difficulties sometimes met in finding the large bowel, and the occasional cases in which serious errors have been made, are known to all; and all will agree that unless one of the longitudinal muscular bands, which are invariably, and only, found in the large intestine, be seen, the intestine should not be opened from the loin. These bands are described as being situated: one on the anterior surface, another along the inner part, and the third at the posterior aspect of the gut. It is this posterior band that is looked for, and generally supposed to be seen when searching for the bowel in the lumbar region. It is thought by some authorities that these bands can be easily detected without opening the peritoneum; but this is not so, except in a very few cases. The author finds, from examination and dissection of over one hundred ascending and descending colons, that the bands are always more easily and distinctly seen when they are covered by the peritoneum, which makes them hard, prominent, and shiny; whereas, when the peritoneum is stripped from them, these characteristics are lost. He admits that in eight cases out of one hundred examined, one or two of these bands could be seen, but not very distinctly, on the posterior part of the intestine, although they were uncovered by peritoneum. When the peritoneum covers only about one-half or two-thirds of the circumference of the gut, it is generally reflected from the gut at the longitudinal bands to the walls of the belly. Thus, unless the peritoneum is stripped off, the bands are not visible. If an attempt is made to expose the longitudinal fibres, the peritoneum, owing to its being so firmly adherent to them, is frequently torn, and the peritoneal cavity opened, perhaps, unknown to the operator. It is argued, in favor of lumbar colotomy, that the large intestine can be reached without opening the abdominal cavity. This, of course, is possible, yet it is much more important to make certain that the large intestine is being opened by first seeing the longitudinal bands. *This, from the anatomical points mentioned, can only be done by opening the peritoneum.*" (Italics are my own.)

Moreover, Mr. Allingham, proves that only by finding the bands can the large intestine be known with certainty in most cases. His conclusions are strengthened by three cases, in which he operated on the right side in the dead subject, it afterward appearing that if he had not looked carefully for the longitudinal bands, the descending portion of the duodenum would have been opened instead of the large intestine, an accident that occasionally happens in operating on the living.

Again, the position of the colon may be an abnormal one. In one hundred cases Treves found it out of its usual position on the right side in twenty-six cases, and in the same number of cases he found it out of its usual position on the left side in thirty-six. In eleven cases out of sixty Allingham found it out of position on the right side, and on the left side in ten out of sixty. Thus the general average of anomalous positions is, on the right side, eighteen and one-third cases, and, on the left side, sixteen and two-thirds out of one hundred. From this it would appear that the normal position of the gut is less common than generally supposed. With the intestine in its normal position, and when a longitudinal band uncovered by peritoneum can be seen, all should go well in the lumbar operation. But when no bands can be seen, the safest distinction between the large and the small intestine is wanting, and in such cases Mr. Allingham considers it more advisable to open the peritoneum and search for a portion of the intestine with longitudinal bands than to run the risk of opening the small intestine under the impression that the peritoneum has not been opened, and that it is the large intestine which is being dealt with. Mr. Allingham further says: "The colon may be entirely surrounded by firmly-

[1] Medical Progress, July, 1890.

[2] Annual of the Universal Medical Sciences, vol. iii., 1889.

adherent peritoneum, and may have a comparatively short mesentery, in which condition it is absolutely impossible to reach it, or to see the longitudinal bands without first opening the peritoneal cavity." The colon was found by Mr. Treves to vary in length on the right side in twenty-six cases out of one hundred, and on the left side in thirty-six cases out of one hundred. Mr. Allingham observed the same variation in forty-nine cases out of sixty on the right side, and in fifty cases out of sixty on the left—a percentage on the right side of eighty-one and two-thirds, and on the left side of eighty-three and one-third. In cases in which the mesentery is very long, the intestine, though it may usually be in the loin, can so change its position that when operating on either side it may lie on the side of the belly opposite to that in which the incision is made. Thus absolute certainty that it is the large, and not the small, intestine, or the stomach, that is to be opened, is imperative. The presence of the appendices epiploicæ may inform the surgeon that he has found the large intestine, but these are not as important as the longitudinal bands, since the appendices may not exist on the piece brought to view. Mr. Allingham does not advocate lumbar colotomy when it is possible to perform inguinal colotomy, for the lumbar is certainly the more difficult operation, the patient runs greater risk, and recovers less quickly, and the after-results are not as satisfactory.

Kelsey says: "Allingham does not emphasize the point which he renders so plain, that when the lumbar operation is performed with these necessary precautions to make sure that the colon is the part opened, it loses its only supposed advantage over the inguinal—the non-interference with the peritoneal cavity."

Mr. Allingham gives the following reasons for thinking inguinal colotomy preferable to lumbar colotomy[1]:

1. The position of the patient is better at the time of operation, for himself, the operator, and the anæsthetist.

2. There is not so much tendency for the gut to fall away from the wound, either at the time of or after the operation.

3. The intestine is easier to find, chiefly because the incision is high. The results of five hundred post-mortem examinations are quoted to verify this statement.

4. The fæces do not pass below the artificial opening if a good spur is made.

5. There is less constitutional disturbance.

6. There is little or no suppuration.

7. The tendency for the opening to contract is not greater.

[1] Annals of Surgery, vol. vii. p. 460.

Chavasse, of Birmingham, advances the following reasons for prefering the inguinal to the lumbar operation:[1]

1. It is readily performed.

2. The patient is easily able to attend to his or her wants in connection with the false anus.

3. The patient is able to lie on his back without discomfort.

4. In malignant disease four or five inches more of the colon are left for the performance of its duties.

5. Being nearer the seat of the disease the operator is able to ascertain, if necessary, the precise limits of the growth.

As a matter of experience, Chavasse states that he has always found that the opening in the sigmoid flexure has been sufficiently remote from the neoplasm not to become implicated during life. Malignant disease of the flexure, except at its juncture with the rectum, is of rare occurrence. Up to the time of writing his paper he had performed inguinal colotomy thirteen times without a death.

Cripps[2] records the results obtained by him in 37 operations, 15 of which were lumbar and 22 inguinal, with 2 deaths, a mortality of more than 5 per cent. The mortality of colotomy has been very great. The analysis of 244 collected cases of lumbar colotomy made by Batt in 1884, gave a mortality of 32 per cent., while the inguinal operation gave a mortality of more than 50 per cent. These statistics, he thought, represented the results up to that period, but they are misleading as an indication of what may be expected of the operation at the present time. Batt regards colotomy as an operation of great delicacy, requiring accurate anatomical knowledge and manipulative skill. The preparation of the patient, the hygienic surroundings, and the subsequent treatment of the wound all demand most careful consideration, and materially influence the result. His chief objections to the lumbar operation are as follows:

1. The absence of sufficient working space between the lower border of the last rib and the crest of the ilium.

2. Difficulty in the identification of the bowel in the limited space, as it is sometimes impossible to recognize the longitudinal bands, and numerous instances are recorded in which the small bowel, the duodenum, or even the stomach has been opened by mistake.

3. In fat or muscular patients, the difficulty owing to the depth of the bowel and its want of mobility, in fixing the colon to the skin without undue tension.

[1] Lancet, February, 1889.

[2] Annual of Universal Medical Sciences, vol. iii., 1890.

4. Abnormal deviations, rendering it impossible to find the bowel by this incision.

5. Inconvenience of the posterior opening for cleanliness and the adjustment of pads.

Inguinal colotomy obviates all these objections by affording a practically unlimited space in front, and an incision through which the bowel can be carefully inspected and identified by its longitudinal bands, by its convoluted surface, and by its appendices epiploicæ. The mobility of the sigmoid flexure and the laxity of the skin prevent the difficulty of fixing the bowel without undue tension. The ease with which thorough exploration of the cavity can be made through the incision removes all difficulties attending the abnormal course of the colon. This method also possesses the advantage of enabling the surgeon to verify the diagnosis by free exploration.

The objections urged against inguinal colotomy are that there is a tendency of the bowel to prolapse, and that it is unsuitable for urgent cases. The first objection can be overcome by drawing down the bowel to its full extent, and the second is believed to be more imaginary than real.

Madelung[1] recommends that the colon be completely cut through; the lower opening being closed and returned, the upper opening being sutured to the skin. At the meeting of the British Medical Association at Leeds, Mr. F. Marsh showed a patient on whom he had performed this operation with a very satisfactory result.

Cripps's operation is performed as follows:[2] The patient having been carefully prepared by a bath and by cleansing of the operative surface, an incision two and a half inches long and one and one-half inches from the anterior-superior spine of the ilium is made across an imaginary line drawn from the anterior-superior spine to the umbilicus (Fig. 1). In order to make the opening somewhat valvular, the skin should be drawn a little inward and the tissues divided until the peritoneum is reached; the peritoneum should then be picked up and incised to nearly the full length of the cutaneous incision. The colon being found, a loop of it is drawn into the wound, and, if loose folds of the sigmoid flexure remain immediately above the opening, it should be drawn down and passed through the fingers into the cavity at the lower angle. When all the gut has passed through the fingers, two provisional ligatures of stout silk are inserted into the longitudinal muscular bands opposite the mesenteric attachment, two inches apart. The bowel is now temporarily returned to the cavity, and the parietal peritoneum is sutured to the skin, on each side of the incision, by two sutures of fine Chinese silk, one and one-half inches apart (Fig. 2), after which the bowel is fixed to the skin and parietal peritoneum by seven or eight fine sutures on each side—the last sutures, one at each angle, crossing from one side to the other in such a manner as to leave two-thirds of the circumference of the bowel external to the sutures. The sutures for the lower side should be passed through the lower longitudinal band, as this is a strong portion of the bowel. Those for the upper portion should be inserted close to the mesenteric attachment (Fig. 3). It is best to pass all of the sutures and then tie them with moderate tension in the order inserted. In urgent cases the bowel can be opened at once; in other cases, the opening may be delayed until the fifth or sixth day, when it is usually found covered with a surprisingly thick layer of lymph.

FIG. 1.

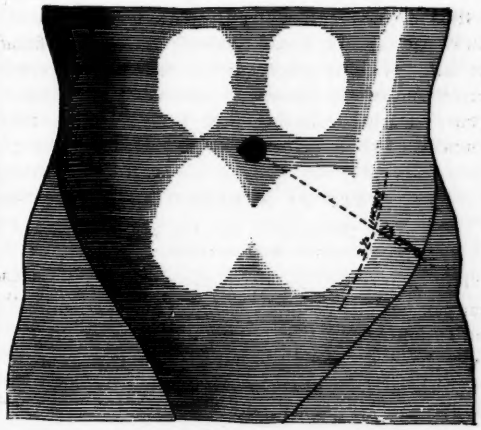
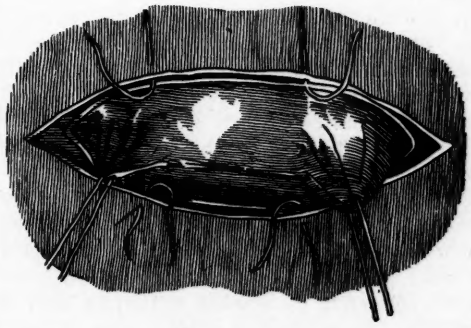


FIG. 2.

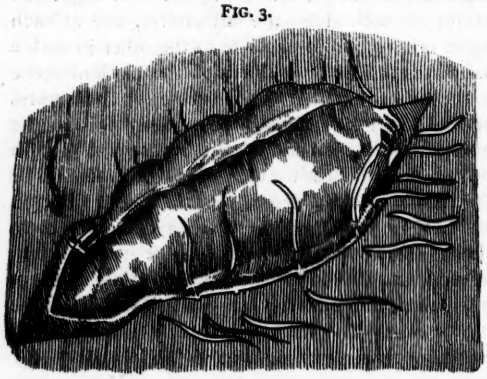


The provisional ligatures will be found useful guides, the bowel being opened the full length between them. The superfluous flaps on either side should be trimmed with scissors to the level of the skin. All sutures may be removed by the ninth day, or earlier if there is redness around them. If the

[1] International Medical Annual, 1890.
[2] British Medical Journal, April, 1890.

bowel is not opened immediately, a piece of protective should be placed over it to prevent adhe-

FIG. 3.



sions of the granulations to the gauze. The wound is then dressed antiseptically, with an additional thick pad and a broad flannel bandage firmly applied. This is important in order to prevent tearing out of the sutures in case vomiting should occur. During vomiting firm pressure upon the wound is of great value.

THE ABUSE OF A GREAT CHARITY.

BY GEORGE M. GOULD, M.D.,
OPHTHALMOLOGIST TO THE PHILADELPHIA HOSPITAL.

THE abuses of the out-patient departments of many of our city hospitals have become so manifold and so outrageous that public silence is no longer a virtue. Some definitive measure of therapeutics, either social, legislative, or surgical, must at once be devised and made effective.

In brief and in general the facts seem to be something like the following:

The motive in the hearts of the founders and supporters of hospitals was, and is, to aid the deserving poor, who have been visited by the misfortune of disease or physical injury, to have their diseases and wounds healed free of charge by the best medical skill. This must ever remain a most commendable charity, to be deprived of which would be sad for civilization. Few things speak so clearly of the highwater-mark in practical religion and morality reached by the modern world, and it is the unique honor of the medical profession which in this respect no other profession can rival, that this beneficent work is effected by the unselfish and unpaid labor of men who make no claim of merit or show of faith. The burden of this writing is an astounding proof that these noble men have been absurdly generous of their service, and have become the victims of their transcendent unselfishness. What explanation of the abuse under discussion I, or any other, may offer, whatever alloy of baser motives and intermixture of sin may be proved, it will forever remain the glory and honor of medicine, and, indeed, of humanity, that in an age of sordidness and self-seeking so many men have given daily life-long service to humanity without money and without price, with a zeal equalled only by the early Christian missionaries, and with a modest quietness that even they could not rival. These facts may serve to paralyze the finger of shame or scorn pointed at the medical profession by any other, justifying rather a touch of pity at the tangle we have got ourselves into.

In the beginning a distinction should be sharply drawn. Of the in-patient departments, or hospitals proper, nothing disparaging may be said. Barring a few exceptional and curable abuses connected with them, they fulfil their duties with exceptional excellence. But many patients are able to visit the hospital for treatment, and without becoming the recipients of the further charity of bed and board, return at once to their homes and business. Such are called out-patients, and the rooms or departments where the treatment of such patients is carried out constitute the out-patient departments. The physicians and attendants of these departments visit them on specified hours and days, and usually have little or no other relations with the hospital. The out-patient department is thus seen to be an after-thought and outgrowth, sometimes a morbid excrescence upon the body of the true hospital, or in-patient department. When the out-patient is in truth too poor to pay for treatment, or when his disease, if neglected in any way, threatens the welfare of the community, it will at once be conceded that it is the community's right and duty to care for such a patient.

But, with this praiseworthy practice has grown up a most execrable abuse. There has of late been widely circulated a paragraph of some statistician to the effect that in 1889 there were 214,000 charity patients treated in one so-called "pauper city" of the Eastern States. In the great Northern and Central Hospital of England the number of out-patients treated in one year, three years ago, was, in round numbers, 10,000. In 1889 it was 15,563, 3,000 more than during the previous year. According to the *Scotsman*, out of a population of 236,000 in Edinburgh, 103,095 are relieved by medical charities, a percentage of 43. In Glasgow, the proportion is much less, showing that to local custom is largely due the difference in medical pauperization. Mr. Smith claims that in Manchester the abuse of medical charities has been reduced from 42.32 per cent. in 1880 to 6.89 per cent. in 1889. The most conservative medical journal we have, the *Lancet*, says that "everyone admits that the number of hospital patients has grown at a rate fourfold greater than that of the population." In

our country no reliable statistics are at hand, but no one would deny that the *Lancet's* estimate is as low as it possibly could be made. The proportion is probably much greater. It cannot be contended that disease has increased to the same extent, because statistics indubitably prove that diseases are less numerous and less fatal than formerly, and that human life is being lengthened by medical science. We touch the quick and lay bare the root of the trouble when we find that a large proportion, if not a majority, of these hundreds of thousands of charity cases could pay for medical treatment were they not shamelessly pauperized by the unasked gratuity held out to them by these institutions. An innate vice of human nature seems to be the desire to get something without paying for it, and the kind-hearted must always be on the strictest guard that want is real, and suffering not assumed. The degradation of patient and of physician is in full operation, and what was once honorable both to give and receive has become alike dishonorable to receive and to give.

First, as to the patient. Due to the indiscriminating methods of the gift, it is fast becoming a settled conviction that the hospital is in some way a governmental or State institution. Most patients are surprised when told that the physicians who treat them never receive a cent from the city, the State, or from anyone. If told that all hospitals are built and supported by the gifts of kind-hearted people, the service is still considered as one to which they have a perfect right, and arrogant feelings are betrayed by every look, word, and gesture. Gratitude either to the unknown giver or to the physician is rarely shown, though this is frequently if not generally, due to the dictatorial way the patient is treated. To illustrate the manner in which the matter is viewed by the out-patient, I may allude to the case of a woman who had been in a hospital, but who could not afford the loss of time required by the hospital treatment. She did not object to paying me fifteen dollars for the three visits made at my office. The hospital she had gone to was one of the rare examples in which there is even a routine of questioning as to the patient's ability to pay for medical attention. She had been told by her friends to wear her shabbiest clothes, and in answer to any query to aver that she was unable to pay. This she did, and she laughingly added that it was the general custom of her neighbors to proceed in this manner. Every clinician has numberless recollections of similarly ludicrous or disgusting instances of how women come dressed far more richly than the doctor's wife could afford to dress, of absurd pretensions, and innumerable trickeries. That he is but getting his just due the patient learns to believe by the many subtle processes of self-deception and cunning whereby men always learn to justify lack of self-dependence. Custom and habit conclude the facile descent to Avernus. "What's the use of paying when we can get it for nothing?" is the unanswerable curbstone logic. No lesson of history and social science is more horribly true than that indiscriminate almsgiving is a crime against God and man, debauching alike both giver and receiver, and multiplying the evil it would thoughtlessly cure. The Roman senators had the mob's dreadful cry, *Panem et Circenses!* in their ears as Rome went to her death, and to our modern demagogic legislation we are adding morbid forms of private charity to teach men loss of self-control and self-help. To free medical advice, free treatment, and free drugs, it is even seriously proposed to add, to the out-patient's ruin, free lunches and free soup.

Not only morally, but medically, the practice has its baneful effect upon the patients. They flock to the hospital in such numbers that the visiting physician has often to treat, or pretend to treat, from thirty to seventy-five per hour. It is the acme of folly and nonsense. "Snap diagnoses" must be made and medicines delivered as if by machinery. Formulæ are kept printed and numbered and are hurried to the druggist, who has the compounds already made and labelled. Upon the appearance of certain symptoms, that might as well be ticketed No. 1, 2, 5, etc., formula 3, 6, or 8 is shot out as if by a nickel-in-the-slot machine, with the exception, of course, of the nickel justice. Every careful physician detests such things, and there is probably some shame in the hearts of everyone who finds himself doing them. A friend told me yesterday that a boy came to him who had made the rounds of several hospitals—there is a large class of folk descriptively termed the "rounders"—and who continuously complained of pain in the side. No other physician had had the time or conscientiousness to examine the boy thoroughly, but had given him salicylates for probable muscular rheumatism. My friend, with some reluctance at the loss of time, quickly had the boy's clothing removed, and at once found curvature of the spine! Possibly this may be an extreme and humiliating example, one not frequently occurring; but every hospital physician will tell you that such examples are entirely too frequent, and that the like may take place many times each day. In almost every case the out-patient cannot get the careful treatment that he should have, and that he would get if the physician's services were paid for. Moreover the patient who can run to the hospital every time he imagines himself to have even the slightest ailment, soon learns to neglect the simplest hygienic rules upon which health depends, quickly falling into habits of self-indulgence, over-reliance upon the doctor, chronic hospitalism, and querulousness.

To the physician, also, the injury is quite as plain. Men spend their early years and their own or parents' savings in laborious study and unflagging zeal to prepare themselves for a life-work that at best is full of arduous duty and toil, that offers no brilliant financial results and demands the best that its devotees can give. When they enter upon their career they find that the older physicians treat, free of charge, thousands and hundreds of thousands of patients who could pay something, and that the younger physicians who need encouragement and practice, and to whom these patients would naturally fall, are left to starve for years, until somehow, by the grace of God, the accidents of chance, or the wiles of scheming, they wriggle into a properly-compensated practice. It is brutally unjust to the young practitioner. It is also as entirely unjust to the suburban and country practitioner, who every day finds that his patients and neighbors have gone to the city hospital and have been treated for nothing. He well knows that he could have treated them more carefully and scientifically at home than the overworked city doctor (perhaps his college classmate) can do in the over-crowded out-patient department. And he knows how able to pay these patients may be. It is highly ungenerous and selfish on the part of those who, having established their practice and feeling financially secure, are able to give an hour or two of each day to treating hundreds of patients without compensation for the poor satisfaction of vanity or to cull from many routine and uninteresting cases one that is rare and "interesting." It is but fair to state that this injustice is unparalleled in any other profession. There are no law hospitals or charity courts where legal advice and counsel may be had for the asking. The young lawyer is not at the outset of professional life met with such an outrageous indignity. Is health worth less to men than property and legal rights? Why should those who give their lives to medicine not be paid for their work?

Several strange and indirect evils result from these crowded out-patient departments. Students and young physicians are taught by conceit, example, and necessity to make hurried, "snap" diagnoses, to treat diseases by memorized prescriptions and the rule of thumb, mechanically, carelessly, and hastily. Every careful physician well knows how fatally unscientific and full of errors such procedures must be. Disease is neither understood nor cured in that manner. Finally, it may be noted that the crowded out-patient room is a bad school of manners. Both ungentleness and ungentlemanliness are almost necessary. A mob of folk have to be handled in a great hurry, and dictatorial manners, harsh commands, and discourtesy are too frequently the result.

How and why has the abuse arisen? It may be accounted for as the combined result of several confluent causes, among which, as has been intimated, must never be forgotten the tender solicitude and unselfish kindness toward the sick on the part of medical men generally. But other reasons are not hard to find. First in importance is the carelessness of almsgivers and testators in failing to demand, and in vigilance to see, that their donations do not become a source of injustice to the medical profession and of corruption to the patient. The physician has never advocated payment for his own services, and the efficacy of the charities of the rich has always been dependent upon the greater charity of the physician. When once the necessity of carefully guarding against this abuse of kindness becomes generally recognized, almsgivers may be relied upon to correct the wrong. Men are kind, and are willing to relieve unmerited and even merited misfortune and suffering, but nothing more quickly shuts the hand and freezes the sympathies than the knowledge that the one you are helping secretly thinks you a fool for doing it, that the method of helping unwittingly increases the evil, and that kindness to one is a greater unkindness to another.

The trustees and managers of hospitals are often largely at fault. Every institution has something in its charter or regulations prohibiting the abuse and guarding against its happening. Subscriptions could hardly have been secured without such an understanding on the part of the donors. But whatever may be said to the contrary, and with some honorable exceptions, it might as well be frankly stated that these rules and regulations are widely ignored. Not one hospital in twenty even asks if the patient is or is not able to pay something for his treatment. And if asked, when the desired and to-be-expected answer in the negative is returned, the investigation is deemed at an end, though the answer is a manifest falsehood. Could human nature, under such circumstances, be expected to resist the temptation to lie? Some far more exhaustive and effective method of getting at the truth than people's own report of themselves has long been recognized as necessary in other forms of charity, and why not in this?

It may strike one as strange, but it is nevertheless a fact, that there is competition among hospitals as furious as it is foolish. The rivalry as to which can do the most good is but a step to that as to which can treat the greatest number of patients. It is a form of the struggle for existence prevalent everywhere, and, as everywhere, it is not always the fittest but the strongest and most unscrupulous that sometimes survives. I have been told that the statistics of hospital reports are by no means always to be trusted. There is a laudable and there is a fool-

ish pride in relieving the poor. The managers and residents must justify their office and their hopeful promises. The "source of supplies" is not averse to entertaining the pleasing thought that he is doing a world of good, and that his gift has not been tied up in a napkin. Such things tend to increase carelessness, indiscrimination, and general sentimentalism. The bidding for patients in the general competition is not seldom frank and unconcealed. The yearly report that shows the greatest number and variety of patients makes the breasts of donor, superintendent, and physician swell with pride and their eyes snap with partisan satisfaction. How easy, under such circumstances, for the abuse to thrive and wax strong.

Sometimes, nay, generally, a "chromo is given with each purchase;" that is to say, most hospitals also dispense medicines without charge. Frequently it is right to do so, but frequently it is mere competition. How can one institution charge even the smallest fee for drugs when its rival does not? It would soon lose its "patrons."

Perhaps the best motive underlying the abuse, and coming the nearest to justifying it, is the desire for "clinical material" for teaching purposes. Hospitals that are not used by medical teachers cannot make this excuse; but they feel the rivalry of those that are so used, and bidding for patients becomes almost a necessity. Schools of medicine must be located in cities where clinical examples of disease are numerous and easy to obtain. Students must see and know disease in order to recognize it in the future in all its forms and to treat it intelligently. Every school of medicine must therefore have its hospital and stimulate its out-patient department to the degree required by this necessity. Whatever may work to this end without too great abuse and too much injustice to others may be conceded as right and necessary. It may even be admitted that a large number of patients must be attracted in order to glean the desired types and illustrative examples of certain diseases. And yet we speedily come to neglected discrimination and unnecessary abuse. For the honor of medicine and of the school there should be in every case attracted a leisurely and careful diagnosis and scientific therapeutics, and such schools should not allow themselves to be drawn into competition with the dispensary and the advertising hospital. There is too frequently an unseemly hunger for the curiosities, the exaggerated anomalies of disease—the "interesting cases." Lecturers are prone to show such cases for teaching purposes. They serve at once to command the students' attention and display the professorial erudition. But there can be no doubt that, for the students' good, the commonest types of disease are precisely those he should see and study most. It is these that he will soonest and oftenest have to treat when in practice; and if he is well prepared the anomalous case will soon classify itself. The most common should be emphasized as the most "interesting."

Yet another source of the evil may be found in the desire of the visiting physician, whether teacher or not, to see a large number of patients, and thus to study disease in its infinite diversity. To this may be added his desire for increased operative skill and dexterity of hand to be gained by much practice, the perfected technique, the lessons to be derived from errors and mistakes, the confidence in self derived from a large experience, and the subtle self-flattery and self-satisfaction in handling large numbers of men and the awful issues of life and death.

And, since the whole truth were better frankly told, another, and possibly most active, though subtle, stimulant of the out-patient abuse is the desire of the chief and his assistant physicians to build up indirectly a private practice. It is well known that no medical man is permitted by the code of professional ethics to advertise. Let it become suspected that a physician is permitting the use of his name by the reporters of the daily papers to spread the knowledge of his skill and the fame of his cures, and at once a blight falls upon him. It is impossible thereafter to rehabilitate his reputation. He has taken a mean advantage of his more honorable brethren, and, as many a doctor who should have been a politician or a stock-broker has learned, medicine is not commercialism or politics. This fact puts the sordid ambitious doctor at a disadvantage in the race for professional fame; but without the strict preservation of this ethical principle, ambitious sordidness would soon gain limitless success and scientific medicine would be at an end. But the fact serves indirectly to multiply the number of the dispensaries and out-patient departments. The older men are in charge of the larger and better institutions, and, of course, "they never resign or die." The younger are handicapped, and, fretting under the fact, they manage to start rival dispensaries. In becoming the head of such a clinical department the visiting physician is able to spread the knowledge of his name through the district whence his patients come, and the practice at his office soon increases. By one means or another charity-patients at the hospital become pay-patients at the private office. The patient loses much time at the hospital, meets unpleasant people, sees unpleasant sights, is barbarously "bossed" about, etc. At the private office it is very different. The hospital becomes a "feeder" to the private practice in more ways than this. I have known it to be frankly admitted that this is the design and

the habit, justification being found for the same in many ways. Whether acknowledged or not, and whether flagrant or subtle, the motive and its execution are all too prevalent. Sentiment—*vulgariter*, "the charity racket"—is "worked" to furnish the financial prerequisites of the undertaking, of which the secondary object alone is the alleviation of human suffering.

By inference I have suggested or alluded to some of the baneful results of the out-patient abuse. In part they may be recapitulated as follows:

1. Encouraging pauperism, dependence, and deceit in a large class of the community already too fatally prone to depend upon the State or charity instead of upon prudence or self-help. This is but one of several reasons that would justify summoning the case before the public as a jury.[1]

2. The abuse, if longer ignored, will soon reach such extreme exaggeration, that when the knowledge of its enormity finally bursts upon the community, all forms of related praiseworthy and necessary charity will be chilled, and the efficiency and usefulness of true hospital work rendered impossible from the lack of funds caused by the disgust of testators and of the charitable, at the misuse of their endowments and the abuse of their kindness.

3. A double injury—first to the patient from a hurried and routine diagnosis and treatment, and secondly to the physician, his science, and his skill, from not patiently studying disease, and not conscientiously applying the proper remedy.

4. The degradation of the profession by turning its practice into a sort of medical "free lunch counter," by encouraging envy and subtle methods of advertising, and by preventing the younger and the country practitioners from rising in their work, and depriving them of their proper *clientèle*. To these things may be added the multiplication and yet deeper abuse of one of the reactions already in full swing in every city, the custom of the doctor to own a drug store, and to give advice and prescriptions free, on condition that the medicine shall be bought at his store.

What is the cure? A number of cures have been proposed, and the following have been, or are being tried:

1. That the competition idea be thoroughly carried out—*à toute outrance*. This means that every practitioner who wishes, or who can, shall rent a room in as conspicuous place as possible—perhaps, get a church to give him the use of one for sentimental reasons, or a drug-store for financial reasons—and advertise to the uttermost the free treatment—and doctor. A beautiful spectacle!

2. The purgatorial plan—a compromise between heaven and hell—that is, out-patient departments where all who are treated are expected to pay something, as little as they must, as much as they will, or with a regular minimum fee of, say, ten to twenty-five cents. A variation of this plan is the medical club formed by a number of members who secure a physician's services at a low club-rate, either per visit or per annum. The design is favorable to the self-respect of the better poor, and gives the attendant some sort of financial justice. It has the excellent advantage of putting the relations of doctor and patient on some basis of mutuality, of encouraging courtesy, and of discouraging slipshod haste and treatment. It is open to the great liability of failure that purgatory itself is subject to—it is neither one thing nor the other. Those lost to self-respect will go elsewhere, and keep their money for beer and ribbons. Those who can pay a little will usually be able to pay a modest fee at the private office.

3. The establishment of charity days or hours at the private office, when all who come will be treated free of charge. This plan is open to all the objections that the hospital abuse suggests, and to many more besides.

4. The sliding scale at the private office, the fee depending upon the patient's circumstances, the lowest honorarium being demanded in the case of the very needy. Willingly or unwillingly, this plan is *de facto* largely pursued, assuring the sensitive poor a desired and desirable protection and privacy, and the kind-hearted advisers a privilege few like to deny themselves.

These four ways pertain to the individual judgment and action of each physician. But, as may readily be divined, the evil will never come to an end by individual action. The abuse is a huge and corporate one, and it has so slowly and blindly drifted to its present low level that only a wide knowledge and a combined harmonions action on the part of many can adjust and remedy it.

It would naturally seem that the pride and honor of the medical profession would spur it to an activity of immediate and effective therapeutics. Just what should or will be the nature of such a remedy no single person would be sufficiently venturesome to say. But assuredly the remedy lies openly in the hands of medical men and medical societies; assuredly one swift word from these sources would

[1] A year ago I gave to the editor of a medical journal, a personal friend, a litttle article having the same general tenor and purpose as the present one; but he refused to publish it on the ground that the abuse did not exist, and that even if it did exist, I would injure my standing among my professional brothers by calling in the public as witnesses of it. I replied that no one could love my profession better than I, and that the very veneration in which I held it nerved me to brave the possible scorn of a few interested or narrow-minded partisans. There can now be no doubt about the extent of the abuse, even *The Lancet* admitting and deploring it. It will certainly not be cured by ignoring it.

right the whole matter. That, so far, the Profession has made no effort in this direction, and that it so commonly denies the fact of the abuse, argues ill for its self-healing power. A fatal anæsthesia seems to characterize as well as mask the symptoms of the disease. The successful practitioner is satisfied with the *status præsens*, the unsuccessful is afraid or powerless. In the meantime the disease grows visibly worse. The sting in the sneer, *Physician, heal thyself!* has lost its hurt. It is well known that when ill a physician never treats himself, but calls in a brother practitioner. Perhaps, also, the rule would work well in the case now in hand. If so, and while awaiting a more concerted and effective method of therapeutics, it might not be amiss to prescribe a general prophylactic measure, a codicil to all wills and bequests running somewhat as follows:

"And I further direct that the fact of the acceptance of the stated moneys, bequests, and gifts, by the trustees of the above-mentioned hospitals, dispensaries, and charitable institutions, shall of itself be the warrant and guarantee upon their parts of a solemn promise that no patient shall receive medical treatment, advice, or medicines within or under authority of the same, who does not bring proof of his poverty and of his deserving from the Charity Organization Society, or who in some other equally certain and convincing way does not demonstrate that he is unable to pay for such medical advice, treatment, and medicines. And I further direct my heirs and executors to withhold the payment of all such bequests and gifts from those institutions whose trustees will not enter into such an agreement, or from such as may at any future time fail to carry out such agreement, or who, in any way, fail to exercise the most stringent care that the sick who receive the benefit of this bounty shall be needy, deserving, and worthy persons, the subjects of misfortune not by their own gross crime or fault."

Postscript.—Since the above was written, and just as it was sent to the printer, the *Lancet*, in a leading editorial, attacks the abuse, using much the same arguments as I have advanced. It says, *inter alia*: "The absence of any effective inquiry into the fitness of patients is monstrous. What would be thought of a poor-law system which gave relief without inquiry? It would be denounced as immoral and demoralizing. It is not otherwise with voluntary charities. . . . Much efficiency may be dearly bought at the expense of the medical profession in the first place, and of the demoralization of the poor in the second. The wide disapproval of it has been too long disregarded by hospital governors, and we fear we must add, to some extent by medical teachers."

TREATMENT OF INFANTILE CLUB-FOOT PRELIMINARY TO OPERATION.[1]

BY F. H. MILLIKEN, M.D.,
OF PHILADELPHIA.

THE purpose of this paper is to offer some suggestions regarding the treatment to be used in cases of club-foot before proceeding with the final operations of tenotomy and osteotomy. Not infrequently we hear of tenotomy, and even of osteotomy, being performed on the feet of infants not more than two or three months old. This is premature practice, and is attended with disadvantages which result from the fact that the muscles of the feet have not been used.

In a congenital, or in an early acquired case of talipes, the bones, tendons, and ligaments are distorted and displaced, and although tenotomy may be performed, and the feet twisted into their normal position, yet, as the members do not assume their proper functions until the child walks, it must remain for many months an open question whether a further resort to the knife may not be necessary. Although success is attained by careful surgeons who personally supervise the subsequent manipulative and mechanical treatment of these cases, it cannot be denied that relapses are more frequent among very young infants than among older ones who received surgical assistance at about the time they began to use their feet and legs.

The fact that a relapsed case of talipes is always difficult to correct should make us hesitate to perform a cutting operation until other and simpler means have been tried, but if resort to the knife is the only alternative, the operation should be performed at the age when the child would begin its efforts to walk. Although it is advisable to postpone cutting operations until near this time, other means should not be neglected, and, if possible, the child should be helped to use its limbs properly without any operation.

Happily, malformation of the limbs is readily recognized at birth, and no time need be lost in using such means as the surgeon may decide on as most suitable to the case, preliminary to the probable final resort—tenotomy.

At birth the tissues are soft and yielding, and with slight manual force can be helped into their proper places. A case of slight talipes can be relieved by daily manipulations, while the same case, if left to itself for several months, would have a tendency to permanent malformation. Owing to this condition, the machinery of the limb being thrown out of gear, the natural coöperative action of the different mechanical parts being altered, permanent lameness and deformity are established.

[1] Read before the American Orthopædic Association, Philadelphia, September 16, 1890.

Perhaps no better means could be suggested for correcting a case of infantile talipes than holding the child's foot in the correct position until a cure is accomplished. But, as in the nature of things, this is impracticable, the next best course must be adopted. The nurse must be *instructed* to manipulate the foot ten or twenty times a day, bringing it into a correct, or as nearly as possible correct position. Emphasis is placed upon the word *instructed*. It will not do to let the nurse merely see the surgeon manipulate the foot and then imitate the procedure as best she can. The surgeon must see that she understands how to grasp the child's foot, and that she knows in what direction to apply the force. A nurse lacking intelligence enough to understand the surgeon's directions is worse than useless, as illustrated by the following case:

A child under my care suffered from equino-varus with incurvation of the toes. The nurse was instructed to grasp the heel and ankle firmly with her left hand, and the anterior portion of the foot with her right hand. She was shown how to correct the incurvation, and by continuing the force bring the foot into a condition of valgus, if possible. In endeavoring to carry out the instructions, the woman grasped the child's leg above the ankle, took hold of the foot and gave it a wrench that bade fair to rupture the deltoid ligament.

In addition to manipulating the foot, the muscles that control it should not be neglected. Massage and the faradic current should be applied, and here, also, the surgeon must be vigilant to see that his directions have been faithfully carried out. Simple instructions to rub and knead certain parts are likely to be neglected, but if a liniment is ordered with which to do the rubbing, the nurse or mother will use it, and by noticing from day to day the diminution in the quantity of the liniment, the surgeon learns whether the rubbing is done.

Very little dependence can be placed on mothers to aid us in correcting the deformed feet of their children. The child's cries excite sympathy, and hence the manipulations are either abandoned, or are so gently performed as to be of little practical value. In view of this fact mechanical means must be employed to stretch the contracted tissues, and, after stretching, to retain the foot in the corrected position. Perhaps the simplest and most efficient appliance for this purpose is a plaster-of-Paris bandage. In the dispensary of the Hospital of the University of Pennsylvania, nothing has given so much satisfaction, among infants under the age of one year, as the following method of treatment:

First, we stretch to the utmost tension consistent with safety, the contracted tissues which are holding the foot in malposition. This is effected by a succession of efforts, using a sufficient amount of force to draw and adjust the parts to the desired position, and then easing off the strain, and repeating it again and again. Continuous tension would probably injure the tissues and prove less efficient.

The tolerance of the feet to the application of force is remarkable. I have frequently felt the tissues tear, and have heard them snap under my hands during my efforts to correct a deformity. This tolerance is most apparent in cases of obstinate and relapsed talipes, in which it is necessary to use powerful levers and wrenches to accomplish the desired result.

After correcting the deformity as far as is possible, by stretching and adjusting the parts, prominent points should be protected by pads of cotton, over which a flannel roller should be smoothly applied. Care must be taken to avoid creases and reverses in applying the flannel bandage, otherwise troublesome sloughs are likely to follow, necessitating an abandonment of the treatment for a time, or the substitution of another dressing. The same caution is applicable in making the first turns of the plaster bandage.

In applying the plaster bandage the turns should be made with a view to correct the deformity by making traction on the roller, *e. g.*, in a case of equino-varus, the bandage should begin at the external malleolus, run diagonally across the top of the foot to the ball of the great toe, thence under the sole to the little toe, and then with a long sweep to the middle third of the leg. This may be repeated until the entire leg and a portion of the thigh are covered. The knee should be bent, otherwise the child is liable to kick the bandage off. The greatest care should be exercised to hold the foot in a correct position while the plaster is setting. It should not be grasped by the hand, as the fingers leave indentations in the soft plaster, and these, when dry, are liable to cause sloughs by pressure on the delicate skin. The palm of the hand should be applied to the sole of the foot, and pressure should be made in a direction opposite to that of the deformity.

Hahn recommends a method by which the foot may be held in a corrected position while the plaster is hardening. One or two layers of plaster are first applied, when the cross-piece of a T-shaped board is placed on the sole of the foot, the ends extending beyond the heel and the toes. The upright of the T projects from the side of the foot. Several turns of the bandage are then made to cover and secure the board. A powerful lever is thus obtained. When the plaster has sufficiently hardened the projecting ends of the T may be removed by means of a saw. I have never used this method, but it seems an efficient one.

Bradford and Lovett in their excellent work recommend that the plaster dressing be renewed

every two or three weeks. This, I do not think is often enough. Renewal once a week, or every ten days, gives the surgeon more work, but better results. When the dressing is removed it is advisable to wash the limb with soap and water, and then to rub it vigorously with alcohol, or better still, with fluid extract of hamamelis. Before re-incasing the foot in plaster the deformity must be still further reduced, and this treatment should be practised at each subsequent dressing. A decided improvement of the position of the foot will soon be apparent if the manipulations are properly performed, and more especially if the surgeon be not too timid to use sufficient force to bring the parts into their normal position.

The plaster-of-Paris dressing has been almost universally described as cumbersome, awkward, and unsightly. The criticism is just if the foot is encased in roll after roll of the plaster, but this is not necessary. My own practice is to use a bandage one and a half inches wide. Three, or at most four, layers for the foot, and three for the leg, are sufficient to hold the most obstinate foot in the corrected position. Over this a woollen legging or a stocking may be drawn. The toes should be exposed, thus enabling the mother to note any change in their appearance. If they become cold, or blue, the dressing should be removed at once, but this will not be necessary if the plaster is properly applied.

The plaster dressing is preferable to apparatus that correct the deformity by means of straps, for the reason that the pressure is made on the entire foot, whereas, in the Scarpa shoe, and in others made on the same principle, traction is almost entirely confined to straps. These are liable to cause excoriations at the points of contact with the skin, necessitating the removal of the apparatus. Valuable time is thus lost. The only disadvantages in the use of plaster are that electricity, massage, and friction cannot be also employed. It has an advantage, however, possessed by no other appliance —that of not being tampered with or removed by the parents of the child.

Elastic traction is employed in cases of club-foot to aid the weaker muscles, and as a constant force tending to pull the deformed members into place. The well-known apparatus of Barwell may be used, but is objectionable because the urine of the child is liable to soak the dressing. The same principle is carried out by Sayre's shoe, which consists of an ordinary laced shoe, in which the "upper" is replaced by a ball-and-socket joint. This leaves the front of the shoe free to be acted upon by force. Two steel uprights extend from the heel to the upper third of the leg. An elastic strap is attached to the sole of the shoe and extends to a button which is riveted to one or other of the uprights near the knee.

Dr. Willard has introduced a shoe that is equally efficient and less expensive. Instead of a ball-and-socket joint, the shank consists of a piece of thin sole-leather, or of soft "upper" leather, thus permitting free movement in every direction. The brace used with this shoe is an improvement on the simple uprights. Greater leverage is obtained by means of a steel arm which is riveted to the stirrup of the uprights. This arm extends forward, upward, and outward, and has an eye at its free end. Through this eye runs a catgut cord, fastened below to the sole of the shoe, opposite the head of the metatarsal bone, and above it to a piece of elastic webbing. The apparatus is especially useful in cases of varus with incurvation. Another very simple and efficient apparatus, also introduced by Dr. Willard, consists of two pieces of printer's blanket, an elastic band, and two ordinary shoe-strings. The printer's blanket should be from two to three inches in width, and sufficiently long to encircle the foot, and the leg above the calf. The ends of the blanket are pierced with eyes, or lace hooks may be substituted, and the two pieces are laced to the foot and leg with the gum-side next to the skin. The elastic band is then fastened to the laces and stretched between the pieces of blanket. The strength of the bands should be adapted to the requirements of the case. The advantages possessed by this simple dressing are, that owing to the adhesive property of the gum it does not readily slip, and need not be so tightly laced as to interfere with the circulation of the blood. It does not absorb urine or fæces, or cause excoriation of the skin, and can be frequently washed without injury. Best of all, it permits manipulation and the use of electricity without disturbing the dressing. An ordinary shoe can be worn with this dressing, thus concealing it, a point which many mothers appreciate.

In private practice, and among people possessing a fair amount of intelligence, the traction principle is by far the best method of treating infantile club-foot; but in dispensary practice we meet with a different class. Here the directions are not faithfully carried out, and the cases often show little improvement. For this reason the fixed dressing is preferable for dispensary cases.

But neither the fixed dressing nor any other can be entirely depended upon to correct a case of severe club-foot, or to effect a permanent cure without a final resort to the knife. What is here advocated is preliminary treatment only. When the child shows an inclination to walk the proper time has come to perform tenotomy, and then the advantages of the previous treatment will be apparent. The plantar fascia will not require such extensive division; the divided ends of the tendons will not separate so widely, and the deformity can be reduced

with comparatively slight force. Besides, with ordinary care there is no fear of a relapse, and the child will be equipped with a more efficient foot than it would have possessed had tenotomy been resorted to earlier.

RACIAL INFLUENCE IN THE ETIOLOGY OF TRACHOMA.[1]

BY SWAN M. BURNETT, M.D., PH.D.,
PROFESSOR OF OPHTHALMOLOGY AND OTOLOGY IN GEORGETOWN UNIVERSITY, OPHTHALMIC AND AURAL SURGEON TO THE GARFIELD AND TO THE PROVIDENCE HOSPITALS, DIRECTOR OF THE EYE AND EAR CLINIC AT THE CENTRAL DISPENSARY AND EMERGENCY HOSPITAL, PRESIDENT OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA,
WASHINGTON, D. C.

No apology is needed to practical ophthalmologists for bringing forward even the most insignificant suggestion as to the nature, etiology, or treatment of so intractable and disastrous a malady as trachoma; and the Committee of Arrangements of the Section of Ophthalmology of the International Congress but echoed this sentiment that prevails among the profession in making trachoma one of the principal themes of discussion. Vast as is the literature upon the subject, there is still lacking that which gives us grounds for positive opinions regarding the cause, pathology, and therapeutics of the disease.

The special point that I wish to emphasize and to which I would direct the careful attention of the profession is the essentially dyscrasic nature of the affection. This feature of trachoma seems to have been almost ignored by the majority of those who have dealt with the subject. The oversight can probably be accounted for by the great impetus given to the study of pathological anatomy in all its ramifications within the last three decades, and which has temporarily obscured that larger and more comprehensive view obtained by a study of the disease from the standpoint of its clinical manifestations and its natural history.

We have had many sections of the trachomatous conjunctiva, and bacteriological investigations without number, and yet it cannot be said that there is anything approaching unanimity of opinion as to the pathology or treatment of a disease which, probably next to ophthalmia neonatorum, produces more blindness than any other affection to which the eye is liable.

It is far from my purpose to intimate that these investigations have been valueless. Besides the accurate and positive information that they have given us as to the changes in the conjunctival tissue as a result of the disease, they have had, I think, the negative value of causing us to look outside of the eye for the original cause of the affection.

Trachoma is generally admitted to be an affection *sui generis*. Its course, and particularly its results, are such as are found in no other inflammatory affection of the conjunctiva. The total destruction of the mucous membrane and its conversion into cicatricial tissue are consequences that follow no other inflammation, no matter how severe or how long continued, except, probably, tubercular inflammation. In its course, behavior, and results the dyscrasia bears a stronger resemblance to tuberculosis than to any other morbid process of which we have knowledge, and that great clinician, v. Arlt, in 1854, first noticed the similarity of the two diseases.

Among the more recent changes of opinion, however, toward a wider conception of the nature of the morbid process, was the study of the geographical distribution of the disease by Dr. Chibret,[1] who honored the Congress with a contribution on the subject. The investigation of Farrovelli and Gazzaniga[2] on the geographical distribution of trachoma in the Province of Pavia, and those just published by Reisinger[3] on its distribution in Bohemia, are confirmatory in a general way of the results obtained by Chibret, who found that an altitude of one thousand feet gave a comparative freedom from the disease, and facilitated its cure when present. Other minor contributions from competent persons have confirmed these observations.

At the meeting of the International Ophthalmological Congress, held in New York in 1876, I called attention, for the first time, to the fact that the negro race in the United States seems to enjoy an immunity from trachoma. Further and careful observation among a large negro population since then have confirmed that statement in full. The material of my clinic in Washington is largely composed of negroes either pure or of mixed blood, and among about 6000 cases of eye-disease available for statistical purposes in that race which I have examined, I found but a single instance of genuine, unmistakable trachoma, and three or four of doubtful character. Occasional cases of this disease have undoubtedly been seen in negroes in America, but the experience of such careful observers as White, of Richmond, Va.; Chisolm, of Baltimore; Baldwin, of Alabama, and many others who have spoken to me verbally on the subject, is in all essential particulars in accord with my own.

This immunity cannot be attributed to elevation, since all the places mentioned are at or near the sea level; nor to good hygienic surroundings, for the negroes, with the exception of some of the better class, live in over-crowded rooms, with every possible

[1] Read before the Ophthalmological Section of the Tenth International Medical Congress, held in Berlin, August 3–9, 1890.

[1] Comp. Rend. Copenhagen Congress, 1884.
[2] Annali di Ottalmologia, An. xvii. Fasc. 1.
[3] Graefe's Archiv. B. xxxvi., Ab. 1, 1890.

facility for contagion and the spread of infectious disease. The only factor that can be considered is that of race, with its powerful influence in predisposing to or giving immunity from the operation of morbid processes. The influence of race is marked, and I presume will not be doubted by anyone. The negro is known to be less susceptible to malarial fevers and to scarlet fever than is his white brother, but more prone to strumous or scrofulous affections of all kinds. The Hebrew is generally supposed to be particularly liable to glaucoma, while the Irish are peculiarly susceptible to trachoma, and wherever they go they carry this predilection with them, even when the conditions of life are infinitely better than those of their native country.

My first acquaintance with trachoma and its results was in a part of Eastern Tennessee which has an altitude of from eleven hundred to fourteen hundred feet. There, among a force of workmen, chiefly composed of Irishmen and negroes, the Irish laborers would have trachoma, often in its worst form, while the negroes associated with them never had the disease. So that an altitude of seven hundred and fifty feet more than is sufficient to give immunity in Europe did not give security to these Irishmen. Farrovelli and Gazziniga also found that altitude was not the only factor, and that trachoma occurred in what was otherwise a very healthy locality.[2]

All of these observations point, it seems to me, to the fact that there must exist in the form of a dyscrasia a predisposition to the disease, just as tuberculosis almost always requires for its development the existence of what is generally known as a "tuberculous predisposition." Trachoma must be something more than a local disease, and it cannot be a purely contagious affection. In fact, there are some who doubt whether it is contagious at all.[1]

This diathesis, while it bears considerable resemblance in certain of its manifestations to tuberculosis and scrofula, must be quite distinct from them in other very important characteristics, for the negro race is very subject to the ravages of both scrofula and tuberculosis, scrofulous affections of the cornea and conjunctiva forming a large percentage of their ocular diseases.

The influence of this view of the pathology of trachoma upon our therapeutics must, it seems to me, be radical. We should cease to treat merely the local manifestation of the disease and should turn our attention to the diathesis lying back of it. We are not yet sufficiently acquainted with the diathesis to enable us to indicate more than a few points that should be considered in its further study. Among these, climate and particularly altitude seem to be the most important, though it is probable that there are factors other than climate and altitude which will have to be considered. If these views are correct, the placing of trachomatous patients among the best possible hygienic surroundings becomes a matter of necessity.

[1] Professor George C. Kober, of Washington, who has had an extensive experience in Northern California, informs me that he has frequently seen trachoma at an altitude of 4700 feet, particularly among the Indians.

[2] Vanneman, Annales d'Ocul., January and February, 1889.

JOINT-INJURIES OF THE UPPER EXTREMITIES.[1]

BY CHARLES D. BENNETT, M.D.,
OF NEWARK, N. J.

JOINT-injuries are always serious, even when the apparent and immediate damage is slight. So much of a person's usefulness is dependent on the free and natural movements of the joints, that any study of articular injuries, or any time spent in considering their treatment, cannot be thought wasted.

The results of treatment are always plainly shown in joint injuries. Vicious union of a fractured bone may usually be hidden by some device of dress, but a stiff joint or an unreduced dislocation is a permanent impairment of power and a disfigurement that cannot be concealed. And as all of our more delicate manipulations are performed by the upper extremities, so will a mistake in diagnosis or carelessness in treatment be here most apparent.

The cases recorded in this paper, gleaned principally from the records of St. Michael's Hospital, illustrate some of these conditions. They are reported, not because they are rare or peculiarly interesting, but because they are actual experiences, and afford some idea of what may occur in the experience of any practitioner.

CASE I.—H. D., forty-five years old, was brought to the hospital, September 10, 1877, by her attending physician, for an opinion. Four months previously she had fallen, twisting her arm under her.

The injury was treated as a sprain until about two weeks previously, when another physician was consulted, who doubted the original diagnosis, and brought her for examination.

Examination revealed a fracture through the condyles of the humerus and backward dislocation of the radius. The joint was firmly ankylosed, and the adhesions could not be broken up. She was sent away with the advice to let the arm alone.

CASE II.—C. B., aged ten years, came to the hospital, August 15, 1877. In the preceding June the patient, while wrestling, fell with his arm back of him, striking the elbow. On rising, he could not move the elbow-joint, and had considerable pain. He was seen by a physician, who did not recognize the injury, and who treated him with

[1] Read before the Newark Medical and Surgical Society, October 16, 1890.

liniments. On admission a backward dislocation of the radius and ulna, with firm adhesions, was diagnosed. Under chloroform an unsuccessful attempt at reduction was made, which caused much swelling and pain. This, however, with the use of evaporating lotions, soon subsided, and the boy was discharged unimproved, with the joint firmly ankylosed at a slight angle.

CASE III.—A Sister of Charity, aged about fifty years, slipped, and catching at a beam above her, sustained an injury of her shoulder.

Her arm immediately became helpless, and painful on being moved. A physician, evidently believing the injury to be only a contusion, prescribed rest, evaporating lotions, and, later, rubefacients and blisters, but the immobility continued. Six weeks after the accident another physician saw the case, diagnosed a partial dislocation of the humerus, and attempted reduction. He claimed to have succeeded, although the disability continued.

Six weeks later the patient came to St. Michael's Hospital and an unreduced subclavicular dislocation of the humerus was diagnosed.

At a later consultation doubt was thrown upon this opinion, some of the staff believing that the lesion was a fracture of the anatomical neck of the humerus, and although measuring over the shoulder girdle and under the axilla showed one-half inch more than the other side, and the arm from acromion to olecranon was one-half inch shorter than the uninjured limb, the doubt prevailed, and it was decided that nothing could be done.

CASE IV.—A boy, aged thirteen years, sent to St. Michael's Hospital, May 24, 1889. While fighting he fell with his arm under him. On rising the arm was stiff and sore, and a physician who treated him for several days finally sent him to the hospital with a diagnosis of lateral unreduced dislocation of the elbow-joint.

On examination the elbow was found much swollen and presented all the evidences of an abscess on the inner side. The parts were so tender that nothing could be done until ether was given, when the abscess was opened, a large amount of pus let out, and the fact that no dislocation existed clearly established.

The wound healed well and the joint promised to be as useful as before, when the boy's natural disposition asserted itself and he eloped from the hospital. I saw him two months later when the joint-motion was considerably impaired.

CASE V.—C. B., aged twenty years, admitted to the hospital, June 19, 1886. On May 29th, she fell down a flight of stairs, striking on her head and on the anterior surface of her shoulder. She was treated by liniments and electricity.

Upon examination great tenderness over the tuberosities of the humerus, atrophy of the deltoid, and induration about the insertion of the deltoid were found. The elbow could not be raised from the side.

The tenderness and pain were relieved by soothing applications, and a few days later, the patient being under ether, a dislocation of the shoulder was reduced, and in a month she was discharged well.

These cases are instances of unfortunate mistakes. Three of the patients are permanently crippled, and their ability to maintain themselves and their families is seriously impaired. The injuries are not peculiar or unusually hard to diagnose, but the doubt that prevailed in Case III. illustrates the necessity of giving every joint-injury, however trivial, a thorough and painstaking investigation.

The two following cases are cited to show that when the proper diagnosis has been made, zeal in interference must be tempered by judgment, or the original injury may be rendered more serious:

CASE VI.—C. F. H., aged eight years, fell sideways with outstretched arm against a wall. He was immediately brought to the hospital, where the exact nature of the lesion was not determined. The arm was bandaged and the boy sent home. On the next day the diagnosis of partial inward dislocation of the forearm was made, but for some reason the application of a lotion was the only treatment prescribed, and the boy was directed to return when the swelling had subsided.

Two weeks later he returned, and under ether reduction was attempted, but failed. During the attempt fracture of the lower extremity of the humerus occurred. All efforts at reduction were abandoned, and the arm was extended and placed in splints. In two weeks passive motion was commenced, and ultimately a useful arm was obtained.

CASE VII.—T. S., aged thirty-one years, was brought to St. Michael's Hospital February 14, 1883. In the preceding October the patient had an attack of acute rheumatism confined to the left elbow, from which he recovered in about three weeks, with a stiff joint. Eight attempts to break up the adhesions, the patient being thoroughly anæsthetized, had been made, and resulted in acute suppurative arthritis, which opened through six sinuses. Patient was temperate and gave no history of syphilis or struma.

On admission the elbow was greatly swollen and inflamed, and around the joint the bones were enlarged. He had profuse night-sweats and was much emaciated. A poultice was applied to the elbow, quinine and iron were given, and amputation was advised.

The advice was not followed, but the patient's general condition improved, and in six weeks he left the hospital much better, but with a useless arm.

The cases that follow are recorded not merely because they were severe injuries and interesting in themselves, but also because they are fair types of a peculiar class of injuries—buffer accidents. Many similar cases come to St. Michael's Hospital, the injuries varying in degree from a slight bruise to the absolute destruction of a limb, for which amputation is the only treatment.

The crushing force exerted by two loaded cars coming in contact is immense, and in an arm caught between them the resulting cellulitis is always severe,

and if sloughing occurs, it is always extended, and the injury is generally greater than is apparent.

Often, even where no wound or even abrasion can be found, the skin and subcutaneous tissue will, in two or three days, turn black, and a slough reaching from shoulder to wrist will form. Hence, in this class of injuries the prognosis should be very guarded, and the almost inevitable cellulitis watched for, and promptly treated.

Some of the cases reported here were possibly not joint-injuries at all, but as the crush included the joint as well as the adjacent soft tissues, and as it was necessary to treat the joints, the cases are included with the others.

CASE VIII.—P. H., aged twenty-two years, while coupling cars, had his arm caught between the bumpers. On admission to the hospital, October 9, 1889, the extremity from hand to shoulder was much swollen. Around the elbow-joint and the upper half of the forearm was a large, fluctuating swelling, probably a hæmatoma. There were extensive abrasions and large bullæ on the inner side of the forearm just below the elbow.

Radial pulse faintly perceptible. Forearm could not be flexed on account of swelling and pain. Although there was no crepitus, fracture was suspected. Evaporating lotions were applied and the arm was placed in a straight splint. Six days later a small slough formed over the olecranon, which separated and left a healthy ulcer. The hæmatoma steadily diminished and the radial pulse became good. On November 23d an abscess which had formed on the anterior aspect of the forearm was opened. Joint-motion improved rapidly under passive movement, and on December 9th the patient was discharged well.

CASE IX.—T. J. C., aged forty years, admitted to the hospital, May 31, 1889. His arm had been caught between the bumpers while coupling cars, and from wrist to shoulder was swollen to about twice the natural size. No pulse at wrist. The swelling about the elbow, especially on the radial side, was very hard. It was impossible to determine whether a fracture was present. An evaporating lotion was applied to the arm and the hand was wrapped in cotton. A straight splint was used.

During the next four days little change took place except that the cellulitis lessened in intensity while the inner side of the arm from the axilla to near the wrist became black. On the fifth day the radial pulse could be faintly felt, and from this time the condition of the arm steadily improved.

The prominent swelling about the elbow, being mostly effused blood, diminished very slowly, and in consequence of the general cellulitis and the pain following any interference with the arm, passive motion could not be practised as early as usual and the joint became very stiff, but under patient treatment this lessened, and on June 26th the case was discharged with orders to report to the out-patient department.

This case was especially interesting in view of the long absence of the radial pulse. The parts seemed ready to slough and the question of amputation was fully discussed, but the final decision to wait proved to be a wise one. Just what arrested the blood-current in the radial artery could not be determined. The radial pulse never regained its former volume and even after entire recovery could be found with difficulty only. Over the upper part of the shaft of the radius and under the hæmatoma remained a hard mass which felt like callus.

Whether the radial was compressed by the blood-tumor, was pinched between the fractured parts of the radius, or had directly suffered in the original crush, was a point on which opinions differed, but there was little doubt that the artery had been practically obliterated and that the pulse was re-established by some anastomotic branch.

CASE X.—P. F., aged twenty-two years, admitted, March 13, 1889. While performing his duties as brakeman, his right arm and forearm were caught between the bumpers of coal cars, the injury being most severe about the elbow. On examination, the entire limb was found much swollen and very painful. Slight subcutaneous hæmorrhage was apparent near the elbow, and between the elbow and axilla, and a few bullæ were formed on the inner side of the forearm. No fracture was found.

The arm was placed on a straight splint and evaporating lotions were at once applied, but the crush had been so extensive that although the skin was not broken, its vitality was gone, and in a few days a slough formed that extended from the wrist to the axilla and included more than one-half the circumference of the limb.

Over the elbow anteriorly, the sloughing opened the joint and a probe passed directly between the ulna and humerus, detected bone that was rough and denuded of cartilage.

With such extensive and deep sloughing there was high fever, with delirium, and later, great depression. The man became very ill, life was in great danger and amputation through the shoulder-joint was seriously considered. But his general condition was too poor, and from the sloughing tissues healthy flaps could hardly have been obtained, so again the decision was to wait, and again the result was a good one. The cellulitis ceased to extend, the slough separated, leaving healthy granulations, the opening into the elbow-joint closed, and after three months the wound had entirely healed, leaving the arm with only slight motion between complete extension and flexion to a right angle.

CASE XI.—W. S., aged twenty years, a brakeman, admitted January 21, 1886. His elbow had been caught between the bumpers of two freight cars.

On examination, two small wounds were found, one on the inner and one on the outer side of the elbow-joint, both of which communicated with fractured bone. Under ether, the joint was found to be completely disorganized, the condyles of the humerus being separated from each other and from the shaft. The tip of the olecranon was broken off

and many small fragments, including articular surfaces, were detected. The soft parts showed little bruising, both arteries could be felt at the wrist, sensation in the forearm and hand was perfect, but little blood had been lost, and there was little or no shock.

Excision of the injured joint was determined upon, and through a longitudinal incision over the olecranon the ends of the bones were turned out, the humerus was sawn just above the condyles, the ulna through the coronoid process on the same level, and the head of the radius was removed. The incision and wounds were closed with continuous silk sutures, a drainage-tube was inserted, a dressing of absorbent cotton applied, and the arm bandaged to a long anterior splint. There was no hæmorrhage and no ligatures were used. During the entire operation the wound was irrigated with corrosive sublimate solution.

For three days after the operation the patient was comfortable, but his temperature varied between 102° and 103°. On the fourth day the arm became very painful, considerably swollen and reddened, and cellulitis was evident from about three inches below the elbow to the shoulders. There was a very slight discharge. The arm was placed on a posterior splint, all dressings were removed, and the inflamed parts treated with evaporating lotions. Two days later the superficial cellulitis had diminished, but sloughs were forming along the incision and the wounds, and there was a free discharge of pus. The wounds were washed out daily with antiseptic solutions and all sloughs were gradually cleared away, among them a section of the ulnar nerve about five inches long.

The fever ceased, suppuration steadily lessened, and bony union was obtained. The man was eventually discharged well, with his elbow fixed in a slightly-flexed position.

An interesting point in this case was in regard to the sensation and motion along the course of the ulnar nerve. Of course, after the nerve sloughed the little finger was paralyzed, and sensation was lost in this finger and in the outer half of the third finger, but before his discharge the patient had some feeling in both fingers and slight return of muscular power. It seems hardly possible that five inches of nerve tissue could be replaced, especially in so short a time, yet in what other way could the return of sensation and motion be explained?

CASE XII.—William S., aged ten years, was admitted to St. Michael's Hospital, October 7, 1887. He had fallen from a tree, a distance of about twenty-five feet, striking the ground with the outstretched palm of the right hand.

He was brought to the hospital several hours later, when a compound backward dislocation of the wrist was found.

The extremity of the radius protruded one inch from the wound, and a longitudinal fracture, beginning at the articular surface and extending two inches up the shaft, held tightly one of the flexor tendons. The styloid process of the ulna was also fractured. The protruding end of the radius had been stripped of periosteum, and the wound, which exposed the entire wrist-joint, was full of blood and dirt.

The boy was etherized, three-fourths of an inch of the radius was sawn off, the tendon was released, the wound thoroughly cleansed with carbolic solution, a drainage-tube inserted and the arm put in Esmarch's interrupted splint, held by a plaster bandage.

The wound did very nicely. Only slight cellulitis followed, but there was considerable discharge, which necessitated dressing the wound every two or three days, this being done without removing the splint. Granulating tissue soon filled the cavity and the wound rapidly closed until only a small sinus remained on the palmar surface, through which dead bone could be felt with a probe. The boy was transferred to the out-patient department on December 6th. At that time the sinus remained as described, the dead bone was apparent but firmly attached, and there was considerable motion of the wrist-joint.

He continued a somewhat irregular attendant at the hospital until May, 1888, and when after an absence of six weeks he again appeared, the fragment of dead bone was loose, and by slightly enlarging the opening, a section of the radius, one inch in length, was lifted out, after which the sinus promptly healed and the boy was discharged well.

This was a very instructive case. The injury was severe, the joint was apparently totally destroyed, and amputation seemed the most rational treatment, especially as at the best only a stiff, deformed, and useless hand seemed possible. But when the boy was last seen he possessed every motion of the wrist-joint, although each was slightly restricted. He had perfect control of the fingers, had no deformity except a slight deflection of the carpus to the ulnar side, and, in brief, had almost as good use of the hand as before the accident.

This whole series of injuries, few though the cases be, and perhaps seemingly unimportant, well illustrate the care, patience, and judgment required in general surgical work. By a hasty diagnosis and brilliant operation the case may be easily disposed of, sometimes, however, with a stiff joint or missing limb which more care or less haste might have saved, and there is no doubt that in such cases the surgeon does better for his patient and for himself who adopts and adheres to the oft-quoted maxin, *festina lente*.

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MEDICAL PROGRESS.

The Microörganisms of Intermittent Fever.—The researches of DR. CAMILLA GOLGI (*Archivio per la Scienze Mediche*) tend to show that not all the intermittent fevers are caused by the same microörganism. Dr. Golgi states that he has been able to demonstrate distinct differences

between the hæmatozoon of tertian fever and that of the quartan type. Biologically considered, the tertian parasite completes its development in two days, while that of the quartan variety requires three days, and the amœboid movements of the former are more marked than those of the latter. Morphologically a distinct difference may be observed in the early stages of development; the amœbæ of tertian fever have more delicate protoplasm and a sharper contour than that of the amœbæ of quartan fever, while the pigment-granules and the bacillary forms are larger. Finally, segmentation takes place in a less regular manner in the tertian than in the quartan organism. Clinically, the destruction of the hæmoglobin in the red corpuscles is much more rapid in the tertian than in the quartan.

Prescription for Offensive Breath.—The following deodorant mouth-wash is quoted by the Paris correspondent of the *Medical Press and Circular*, October 1, 1890:

℞.—Bicarbonate of sodium, Saccharin, Salicylic acid } of each 1 drachm.
Proof-spirit . . . . 6 ounces.

Add one teaspoonful to a cupful of water, and use as a mouth-wash.

An Analgesic Spray.—DR. DOBISCH, of Zwittau, recommends the following as a spray-solution in superficial neuralgias, especially those of the head:

℞.—Menthol . . . . 1 drachm.
Chloroform . . . . 10 drachms.
Ether . . . . . 15 " —M.

This, it is said, will freeze the skin in about one minute. If, in addition to the local effect, a moderate constitutional anæsthesia is desired, a small quantity of the mixture may be sprayed upon the nose and mouth for a moment, the head being covered by a canopy to confine the vaporized solution during a few inhalations.

Treatment of Eczema.—LUSTGARTEN recommends the following ointment in the treatment of eczema:

℞.—Oleate of cocaine . . ½ to 1 drachm.
Lanolin . . . . 3 drachms.
Olive oil . . . . 5 "

This ointment he thinks is particularly valuable in eczema of the anus and genital organs. Two applications should be made each day and followed by the use of absorbent powders. Hot baths are very useful if prolonged. For pruritus of the anus, suppositories of the oleate of cocaine are often exceedingly useful.

Lotion for Sweats.—

℞.—Tincture of belladonna . . ½ ounce.
Cologne water . . . 4 ounces.—M.

Bathe the affected parts.

Solution for Intertrigo.—

℞.—Bichloride of mercury . . ½ grain.
Distilled water . . . 3 ounces.

Dissolve, and after solution is complete, wet compresses with the liquid and place them upon the affected parts, allowing them to remain there for an hour. This may be done three or four times a day when the intertrigo is very severe, but it should be remembered that there is some danger of the absorption of the drug and the production of ptyalism if this treatment is resorted to too frequently. Where intertrigo is so severe as to become gangrenous or diphtheritic, Wertheimer prefers to employ local antiseptics such as carbolic acid, and he also washes the parts with water, alcohol, or tincture of iodine. In cases where there is simply excoriation, diachylon ointment may be mixed with equal parts of olive oil and applied to the affected parts. The diseased area should always be kept perfectly clean and all exudation should be removed as rapidly as possible.

The Administration of Mercury to Syphilitic Infants.—Infants who are born syphilitic, or who contract the disease shortly after birth, improve so wonderfully in many instances under the use of mercury, that the following note from the *Revue Général de Clinique et de Thérapeutique* concerning this subject is of interest:

When the child is from five to six weeks of age, ELOY recommends that 5 to 20 drops of Van Swieten's liquid shall be given each day in milk. (Van Swieten's liquid consists of a solution made by the addition of 1 part of bichloride of mercury to 100 parts of alcohol and 900 parts of distilled water.) At the same time that this liquid is given internally, it is advisable to use inunctions of mercurial ointment, or, better still, to employ mercurial ointment diluted by lanolin, equal parts. After this ointment has been used for two or three days, it is best to administer a hot bath. Wiederhofer, of Vienna, considers that red precipitate in the proportion of 1 part to 100 parts of lanolin is even better than ordinary mercurial ointments for inunctions. Baths of corrosive sublimate are particularly valuable, the patient being immersed every third day for a varying length of time, according to the effect of the drug upon the general system. The bath is prepared by adding three grains of corrosive sublimate and fifteen grains of chloride of ammonium to one-half pint of distilled water. This is poured into a wooden or earthenware bath-tub just before the child is immersed in the warm water, which has already been placed there. When the child is older, that is six or seven months of age, the following prescription may be administered with advantage:

℞.—Biniodide of mercury . . 1½ grains.
Iodide of sodium, Distilled water } of each . 1 drachm.
Syrup of orange . . . 6 ounces.

Of this give ½ a coffee-spoonful to a child of a year, and 5 coffee-spoonfuls to a child of from five to eight years. In other instances calomel and white sugar may be given, ⅛ of a grain of mercury being used for each dose. Sometimes the protiodide of mercury may be given in the same quantity in place of the calomel, and it is particularly useful in combination with the saccharated carbonate of iron in the dose of ½ grain, enough white sugar being added to give the powder proper bulk.

THE MEDICAL NEWS.

A WEEKLY JOURNAL
OF MEDICAL SCIENCE.

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SATURDAY, NOVEMBER 22, 1890.

THE LOCAL PARASITICIDE TREATMENT OF CANCER.

THE nature and general appearance of cancer, more than of other tumors, suggest a microörganismal original; and although there have been absolutely no successful attempts at demonstrating such an idea, the question must be considered as still *sub judice*. The present state of our knowledge by no means admits the probability of such an origin, but the enticing hope of a brilliant discovery is sufficient to maintain the interest of investigators and clinicians in the subject. Many eminent surgeons continue to apply some such substance as solution of chloride of zinc to the exposed tissues after the ablation of a cancerous growth, to destroy a possible specific microörganism.

This idea of the microörganismal origin of cancerous growths is suggested to POUCEL, Surgeon to the Marseilles Hospital (*La Semaine Médical*, September 10, 1890), by several successful results obtained by him from interstitial injections of bichloride of mercury. This writer details seven cases of growths of a cancerous appearance which were treated in this manner. In two cases of undoubted cancer of long standing and in persons of advanced life the treatment was unsuccessful. Of the five successful cases, one, a woman aged fifty-eight years, without syphilitic, tubercular, or cancerous antecedents, or acquired syphilis, presented a large nodular growth of the left breast, with no retraction of the nipple or ganglionic enlargement. Several interstitial injections, the course of treatment extending over several months, caused the entire disappearance of the tumor, and the patient continues in a normal condition. Another case was that of a woman with a tumor of the right breast, which was large, hard, irregular, and ulcerating, and with a retracted nipple, but no glandular enlargement in the axilla. After a number of injections of corrosive sublimate the tumor disappeared, but the patient died several months later in an attack of angina pectoris, and no histological study of the case seems to have been made. The third of the five successful results was obtained in the case of a retired army officer, who was afflicted with a suppurative periganglionic inflammation of the groin. Upon incision there was found an enlarged, hard, solitary gland in the inguinal chain. The patient confessed to having had a hard chancre a number of years previously and was placed upon antisyphilitic medication, but the growth increased in size, became hard and nodular, and had the external appearances of an old inguinal hernia. After twenty-three days of bichloride injections (ten *séances*, injecting three milligrammes every two days), the swelling completely disappeared and has not recurred. A fourth successful case, the son of the last patient, presented several indurated glands in the groin, which in Dr. Poucel's opinion were of the nature of ordinary lymphadenomata and caused by toxæmia. They were of several years' standing, at first indolent and soft, recently hard and increasing rapidly in size in spite of internal medication—chiefly iodide of potassium and quinine. A daily injection of corrosive sublimate solution caused their disappearance within eight days. The last successful case was not under Dr. Poucel's direct observation, and had been variously diagnosed by surgeons as hæmorrhoids, syphilomata, and cancer of the rectum.

Upon these seven cases rests Poucel's evidence as to the parasitic nature of cancerous formations. In two apparently unquestionable cases of cancer death occurred, and from these, of course, no inferences can be drawn. Of the remaining five the diagnosis in three is confessedly weak, and apparently almost surely mistaken. Of the first two, while the local disappearance of the growth was apparently accomplished, in one the death of the patient within a short time from an attack of angina pectoris coupled with the lack of an autopsy permits the

suspicion of the existence of metastatic foci, angina pectoris being no rare sequel to cancerous generalization. Of these seven cases the last one alone seems worthy of entire credence. It is unfortunate that no histological examinations were made in any of these cases.

The general history of the germicidal treatment of cancer is in accord with these results of Dr. Poucel, each successful report being counterbalanced by innumerable failures, and usually by the stigma of doubt. The local use in such cases of what are now known as antiseptic materials dates far back in the history of modern medicine; and in Philadelphia the local employment of corrosive sublimate in these neoplasms was recorded as early as 1793 (Senter, *Transactions of the College of Physicians of Philadelphia*, 1793, vol. i. p. 245). The use of interstitial or parenchymatous injections was first suggested by Broadbent (*Medical Times and Gazette*, 1866, ii. p. 572), acetic acid being employed for the purpose; and since then various reports have appeared extolling the merits of this or that substance as an injection-material. The vast bulk of evidence as to these methods has been decidedly against any special parasitic cause of the disease. Whether the present suggestion leads to definite results, of course further experience must decide, the evidence in hand being of little value in the face of the mass of contradictory testimony.

SOCIETY PROCEEDINGS.

PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting, November 3, 1890.

THE PRESIDENT, D. HAYES AGNEW, M.D., IN THE CHAIR.

DR. J. EWING MEARS reported a case of

OCCLUSION OF THE JAWS OF TWENTY-SEVEN YEARS' DURATION IN A WOMAN AGED THIRTY-FOUR YEARS.

He first read a letter from the patient's brother, a physician of Texas. The letter stated that the patient was badly salivated when six or seven years of age, and that there were considerable destruction of tissue and extensive adhesions. A physician divided all the adhesions and opened the mouth, but left the subsequent treatment to a timid nurse, and the result was a failure. When fifteen years of age and when the ankylosis was complete, she was taken to a prominent surgeon in Nashville, who failed to open the jaws. He said that he could not break up the ankylosis without endangering the maxilla at or near the angles. Her health was good but she could not masticate food. She had had a number of asthmatic attacks and several attacks of facial erysipelas which had promptly yielded to treatment.

On coming under Dr. Mears's care the patient gave a fuller history of her case. She said that the surgeon in Nashville had endeavored to open the mouth by continuous traction applied by means of a wire placed around the jaw. This failed and some years later she went to New Orleans to consult Professor Richardson, of the University of Louisiana, who sent her to Dr. Mears.

Notwithstanding the fact that the space between the teeth would just admit the point of a thin knife-blade, she had been doing duty as a teacher, talking through the teeth. She also presented a condition which has been noted in cases of the same nature, that is, non-development of the bones and soft tissues of the face. She was about five feet eight and one-half inches tall, and yet she had the face of a child—what Dr. Mears has designated as a "baby-face." This, both she and her friends had recognized. After the operation, as could be seen from a photograph, this appearance changed and she now has the face of a woman at her time of life.

Previously to operating the buccal space was entirely obliterated. There was simply an opening between the lips through which could be seen the incisor and canine teeth of the upper and lower jaw, but nothing more. The case was at once recognized as one of cicatricial occlusion. She was etherized, an incision was made through the cicatricial tissue on each side, and the mouth forced open. At the same time Dr. Mears removed nineteen teeth. Those of the lower jaw crossed under the tongue, those of the upper jaw projected in various directions, so that in the oral cavity proper there was scarcely room for the tongue. These teeth had irrupted after the jaws became occluded, and not being able to develop in a proper manner, had taken the positions described. The cavities made by the incisions were packed with five-per-cent. iodoform gauze. This dressing was removed in two days and fresh gauze inserted.

After the painful stage following this operation had passed, the second stage of the treatment was begun, and consisted in the passage of ligatures through the cicatricial mass. These ligatures were deposited as deeply as possible on either side by means of a long needle with an eye near the point, the ligatures being brought out on a line with the position of the last molar tooth. The ligatures consisted of heavy silk, carbolized and twisted, and were tied loosely. In conjunction with this, Dr. Mears used an apparatus which he devised some years ago for opening the mouth and for performing operations on the oral cavity. As was expected, some contraction followed the division of the cicatricial tissue. The object in passing the ligatures was to get a track or canal which, after a time, would be lined by mucous membrane and would permit division of the overlying tissues without reformation and reunion, as we treat webbed fingers or toes. In three weeks' time the tissues over the ligatures were divided and the ligatures were reapplied, using two on each side, one above the other. These were allowed to remain in place for three weeks, when the overlying tissues were again divided, and it was found that an opening of one and three-quarters inches had been secured. The use of the instrument was continued for some time after the patient's return to her home. The speaker then exhibited a photograph showing the result a year and a

half after the operation. She reports that the opening is equal to one and a half inches, taken between artificial teeth.

Dr. Mears said that the result in this case was similar to those that he has secured in other cases in which he adopted the plan of treatment by ligatures. He has from time to time tried simple division of the tissues, but invariably the jaws have again closed. The plan of inserting ligatures is of course adapted only to this class of cases, and not to ankylosis or synostosis of the temporo-maxillary articulation. All the incisions were made and the ligatures were deposited within the mouth.

The change in the appearance of the face is quite marked. The shape of the face in such cases is due in part to non-use of the muscles of the jaw, and in part to non-development of the bones. The speaker has reported other cases of this kind, one in which he opened the mouth of a gentleman, in whom the closure was of seventeen years' standing, and although he was thirty-two years of age he had never grown any beard. As soon as the man regained the use of the jaw the beard began to grow and the face was soon covered with hair. This can probably be explained by the increased circulation brought about by the use of the muscles.

In discussing this paper DR. O. H. ALLIS said that the condition of the teeth to which Dr. Mears had alluded would hardly seem possible to one who had not seen similar cases. The person cannot keep the mouth in a cleanly condition. If a tooth ulcerates or becomes inflamed it is impossible for a dentist to remove it. The amount of suffering which such a patient must go through can hardly be described. He did not know of an operation that is a greater boon to such patients than that described by Dr. Mears. The speaker has performed it but once, and in this case he signally failed by the ordinary means, but with the assistance of Dr. Mears he secured a good separation of the jaws. In this case a portion of the jaw was removed.

In closing, DR. MEARS said that he cordially agreed with what Dr. Allis said. We can scarcely appreciate the condition of a patient with complete occlusion of the jaw. In some of his cases there was considerable danger from the condition. One patient, a boy, crowded a large quantity of pie between his teeth by the aid of a knife and a stick, so that he was in great danger of asphyxia. Patients dread any inflammation of the pharynx because of the impossibility of local treatment. In some of the cases, when emesis occurs, the vomited matter escapes through the nose. In all the cases there is a great deal of courage and a desire to be relieved, especially on the part of the women. In the case which was reported to-night, the patient lived on fluids. In another case the patient had worn away to a great extent the incisor teeth by rubbing pieces of meat on them in order to get the juice. These operations, he said, give as satisfactory results as any operation in surgery.

DR. L. W. STEINBACH then read a paper on

THE ENDOSCOPE.

The speaker said that he wished to direct the attention of the Fellows to the use of this instrument of precision in the examination of the interior of the male urethra.

The ideal method of examining the urinary passages, or any other cavity, is that which makes them accessible to the eye; such a method has been perfected and is available to every one who cares to employ it.

The urethral speculum, or endoscope, in its simplest and best form, is a cylindrical tube, from four to six inches in length, and one-fourth of an inch in diameter, with a funnel-shaped expansion at its ocular extremity. It is made of hard rubber or polished metal, and for convenience of introduction is provided with a closely-fitting conductor, the rounded extremity of which forms an obturator to the visceral end of the tube.

The illumination is obtained by reflecting the rays of the sun, or of a gas- or lamp-light from a large concave head-mirror, bringing them to a focus on a level with the internal orifice of the endoscope.

No special preparation of the patient is requisite; he is seated on a chair with his back toward the source of light, the garments arranged to expose the pubic and scrotal regions only; the physician, sitting on a chair opposite, introduces the previously-oiled instrument in the manner of introducing a sound.

The penis is seized with the thumb and index finger of the left hand behind the glans, the remaining fingers are placed upon the pubes to steady the organ, whilst the right hand carries the endoscope with the thumb pressing upon the conductor to prevent it from slipping out. The instrument is guided along the centre of the urinary canal to a distance of four inches, which is sufficient to inspect any portion anterior to the verumontanum. When we desire to inspect the prostatic portion of the urethra or more posterior structures, an instrument six inches in length is required, and the patient must be placed in the recumbent posture to enable us to guide the endoscope under the pubic arch. It is necessary to have one or more long probes and a pair of slender forceps for the purpose of carrying absorbent cotton, which is used to remove secretions and deposits of the substance which is employed to lubricate the endoscope, and to apply medicines. The forceps are also used to withdraw pieces of cotton which occasionally slip from the probe. When we bear in mind that the mucous membrane of the urethra is arranged in longitudinal folds, and upon transverse section presents a stellate appearance, we at once understand the image which we behold when the conductor is withdrawn and the secretions removed.

The portion of the urethra seen at one time is necessarily small, but by gradually withdrawing the tube every part of the canal can be inspected. It requires practice and instruction to interpret properly the images that present themselves, but the reward is more than ample when we are able to recognize the different inflammatory stages, congestion, granulations, ulcers, cicatrices and polypi, and can apply our remedial agents in a rational manner directly to the portion affected.

The adverse criticism of this method, which in the hands of a few of its zealous advocates has developed into a science, comes mainly from those who have not taken the trouble to master the subject, or who abandoned it because of the complicated, costly, and unsatisfactory appliances which were deemed necessary.

In discussion DR. JOHN B. DEAVER said that Dr. Steinbach had not referred to the Leiter electric-light endoscope, the instrument that the speaker was in the

habit of using. This is a very satisfactory instrument, and with it the mucous membrane of the urethra can be seen with remarkable clearness. In one case, where divulsion had been practised, a teat of mucous membrane was left which was at once apparent to a gentleman who used the instrument for the first time. This case served to illustrate one argument in the speaker's paper opposing divulsion of strictures, read before the American Medical Association. He has been able to cure many cases of gleet in which he was unable to discover a stricture of large calibre with the urethrameter, which he considers the best means for discovering this most common cause of gleet, by making applications to the granulating membrane through the endoscopic tube.

A man was recently brought to him who, four days after suspicious intercourse, had localized pain one inch within the meatus and an induration along the floor of the urethra with slight discharge. In making the urethroscopic examination an ulcer was found which presented the appearance of a chancroid. There was also unilateral enlargement of the glands. The ulcer was touched with a fifteen-grain solution of nitrate of silver, and after three applications it was well. This could, of course, have been accomplished with the tube which Dr. Steinbach referred to.

A urethroscopic tube six inches in length, Dr. Deaver thinks, is not of much service without the incandescent lamp. With the lamp there is no difficulty in exposing the prostatic urethra, although there is some pain caused by the introduction of the instrument beneath the triangular ligament. In a number of cases he has satisfied himself of the presence of pathological conditions of the prostatic urethra, particularly in impotence, of which these lesions are the commonest causes and in which he has obtained satisfactory results from applications through the tube.

He calls the instrument a *urethroscope*, which he thinks is a better name than *endoscope*.

In closing, DR. STEINBACH said that he wished to indicate only one method of making these examinations. He has had ample experience with the instrument which Dr. Deaver mentioned. It is surprising that we do not use these instruments more extensively in the examination of the urethra, the deep urethra, and the bladder. In the University of Vienna there has been for the past ten years or more a chair, occupied by Dr. Grünfeld, devoted to this subject. They have daily clinics, and examine from twenty to one hundred patients. The professor in charge, while showing all the various instruments devised for this purpose, teaches his pupils to use the simpler forms and those which are cheap. When we wish to examine the bladder or some particular growth in the urethra, the electric light is probably better, but in ordinary cases the light reflected from the head-mirror answers every purpose. A four-inch tube is sufficient for most purposes. The longer tube is necessary for the deeper urethra and its introduction requires more skill. When we wish to examine the bladder it is necessary to have a glass obturator, to prevent the escape of urine through the tube.

Dr. Steinbach then showed one of the most recent forms of the electric-light cystoscopes and some of the simpler forms of urethroscopes, which he described.

TRI-STATE MEDICAL ASSOCIATION.

Second Annual Meeting,
held in Chattanooga, Tenn., October 14, 15, and 16, 1890.

(Continued from page 520)

SECOND DAY.—EVENING SESSION.

The Association met in Stone Church, and was called to order at 7.30 P.M. An

ADDRESS OF WELCOME

was delivered by DR. G. W. DRAKE, and was responded to by Dr. G. C. Savage, of Nashville.

This was followed by the President's Address, entitled

"THE DOCTOR."

The President said that the man who starts out to be a doctor must understand that the life is one of toil. The laggard, the indolent, the careless, or the sluggard never succeed. The doctor must be educated, not as that term seems to be understood in these days. Modern education, he feared, is too much a process of *stuffing* and *cramming*. The term education means more than this. To educate is to draw out, to enlarge, to expand, to develop, and to strengthen.

THIRD DAY.—MORNING SESSION.

DR. T. HILLIARD WOOD, of Nashville, Tennessee, contributed a paper on

HYPERTROPHY OF THE TONSILS.

He said that the treatment of hypertrophy of the tonsils has been subject to many variations. If the enlargement be due to swelling of the mucous membrane or to engorgement and congestion of the tonsil, the application of astringents may be of service. The most useful local remedies are the subsulphate and perchloride of iron (about one part to six or eight parts of water or glycerin) and alum or tannin in powder. But where there is true overgrowth, the remedy must be of a destructive character, and escharotics, not astringents, must be used. For this purpose "London paste" is useful, and should be applied once or twice a week. This will produce a slough, and repeated applications will reduce the gland to the normal size.

Constitutional measures to effect reduction of the tonsils include remedies to combat the diathesis upon which the enlargement often depends, such as iodide of potassium, and cod-liver oil; the general tonics, such as the preparations of iron, and the simple bitters, are also useful.

With reference to operative treatment, excision by the tonsillotome is most popular, although the speaker prefers the bistoury and vulsella forceps. The operation is rendered painless by applying to the tonsil a solution of cocaine, and by injecting, with a hypodermic syringe, a few drops of the solution into the substance of the gland. As a rule, general anæsthetics should not be used.

To reduce to a minimum the danger from hæmorrhage, we have the comparatively bloodless operations by the cold snare, ignipuncture, and the galvano-cautery amygdalotome. Of these the galvano-cautery amygdalotome seems preferable, and is highly recommended by Wright, of Brooklyn. Ignipuncture is tedious, requiring repeated applications, and is attended by consid-

erable pain. Moreover, it cannot be employed in the cases of refractory children.

In discussing this paper DR. N. C. STEELE, of Chattanooga, said that the amount of hæmorrhage during tonsillotomy depends upon the condition of the tonsil. He uses the bistoury in adults and the tonsillotome in children.

DR. E. T. CAMP said that he had been able to reduce hypertrophied tonsils without operation, by using iodized phenol locally, and general remedies.

DR. GEORGE A. BAXTER suggested painting the tonsil with flexible collodion.

DR. SAVAGE said that there were two indications for operating, viz.: Repeated attacks of tonsillitis and interference with breathing. He uses Mathews's tonsillotome and never applies cocaine. From personal experience he knows that the operation is not painful.

DR. GAHAGAN suggested cold food and drinks in cases of incipient tonsillitis.

DR. REEVES thought that in removing the tonsils we leave cicatricial tissue which alters the quality of the voice. He uses tincture of iodine locally.

DR. WILLIS F. WESTMORELAND, of Atlanta, Ga., said that the enlargement of the tonsils is due to exposure, hence the greater number of cases in males. He prefers the bistoury, and has abandoned cocaine because it increases bleeding. Ignipunctnre is too painful.

DR. FRANK TRESTER SMITH, of Chattanooga, resorts to ignipuncture when he cannot get consent to excision. Bleeding may continue for a long time after the use of cocaine. The indications for operation are (1) difficult breathing, (2) unnatural voice, and (3) recurring tonsillitis. The voice after operation improves, as a rule.

AFTERNOON SESSION.

DR. E. A. COBLEIGH, of Chattanooga, read a paper entitled

A CASE OF REMARKABLE INJURY, WITH RECOVERY,

and exhibited the patient.

The patient while working in a well was struck by the sharp end of a heavy drill one inch in diameter, which fell about forty-five feet. The implement penetrated the back of the neck, ploughed through the tissues, and emerged from the right side of the chest, protruding about eight inches. The man stepped down from the platform on which he was working, supported himself against the side of the well, and called on a fellow workman to pull out the drill. A stalwart negro tried to do so with both hands, but failed. He mounted the platform and tried again by a steady pull, which did not budge the impaling instrument. He then resorted to a to-and-fro motion with the powerful leverage of the long handle, and was thus able to loosen and extract the drill from above.

The patient was now very imperfectly fastened to the well rope with a noose passed around him, and was drawn to the surface, placed in a chair and conveyed to an adjoining work-room. The patient is twenty-eight years old, five feet and eleven inches high, and weighs 185 pounds, having a magnificent physique.

Examination showed that the wound of entrance was situated one and one-half inches to the right of the spinous process of the fifth cervical vertebra, and that the drill had barely missed the spinal column. It passed downward and very slightly forward and to the right, leaving a rather smooth, oval opening with somewhat inverted edges, resembling the wound of entrance of a round shot, and not as large as one would expect from the size of the wounding instrument, yet sufficiently large for the cervical muscles and fascia to be plainly seen. The shape of the wound caused it to close like a valve, yet air was entering and escaping with a pink froth at nearly every respiratory effort. There was not much hæmorrhage.

From the neck the drill passed into the chest cavity between the scapula and the clavicle, without damage to either of these bones, impinged on the third and fourth ribs, which were fractured in the line of the wound—the fragments evidently being parted as by a wedge while the drill was *in situ*—then passed down on the anterior and outer surface of the fifth and sixth ribs without injury to either, and emerged by a large gaping and ragged wound, with everted edges, at the inferior border of the sixth rib, its centre being at the time of the examination two inches below and one and a half inches to the right of the nipple. There was only moderate bleeding from this wound, into the opening of which Dr. Cobleigh could introduce the tips of three fingers, and no air was escaping. The skin and subcutaneous tissues seemed to be absolutely deadened by the magnitude of the injury, and to have lost their normal elasticity. He passed two fingers into the wound, entering the pleural cavity under the broken ends of the lower fractured rib, which could be distinctly felt. Everything was torn and indefinite, the ends of the broken bone were removable, but he was not able to satisfy himself whether the subjacent lung surface was injured, though he thought it was. The length of the wound was fourteen and a half inches.

On withdrawing the fingers the wound closed by the collapse of its sides, which prevented profuse external hæmorrhage. There were intense pain and a marked degree of shock as shown mainly by the pulse, the mind remaining clear throughout. The integument, however, was quite clammy, and the patient complained a great deal of chilliness, but had no pronounced rigor. There were extreme rapidity and difficulty of respiration, and Dr. Cobleigh believed that the man would die in a short time, especially as the signs of depression were increasing fast, the pulse becoming flickering, irregular, and intermittent, and the mucous surfaces blanching.

Dr. Cobleigh regards the recovery of the case as remarkable and fit to be recorded with the celebrated "crow-bar" case of Maine, and with the later case of abdominal perforation by a railroad coupling-link which happened a few years ago in Kentucky.

DR. WILLIS F. WESTMORELAND, of Atlanta, Georgia, read a paper on

MORBID REFLEX NEUROSES AMENABLE TO SURGICAL TREATMENT.

DR. H. CRUMLEY, of Chattanooga, presented a case resembling epilepsy, which was examined by many members of the Association.

DR. J. R. RATHMELL, of Chattanooga, reported a

CASE OF ABSCESS OF THE LIVER.

The patient had dysentery in July, and Dr. Rathmell was called to see him on December 17th. The abscess began to discharge through the lung on December 21st, and continued till February 27, 1890, when the patient died. No autopsy was made.

DR. TOWNES followed with a paper on

DILATED CARDIAC HYPERTROPHY, WITH NEPHRITIC COMPLICATIONS,

illustrating his paper by specimens of the condition and by other specimens for comparison. Attention was called to the etiology, and especially to alcoholism and its effects upon the kidneys and liver. The weight of the heart shown was twenty-six and a half ounces. The kidney was an example of those termed by Formad, of Philadelphia, "pig-back."

In the treatment of this patient tincture of digitalis was administered, at first 10 drops, increasing later to 60 drops every hour. Then tincture of strophanthus was given, 20 drops, three times daily, and the heart-beats were reduced from 124 per minute to 47.

EVENING SESSION.

DR. R. J. TRIPPE, of Chattanooga, reported a

FATAL CASE OF PERITONITIS,

which occurred in a muscular negro, as the result of a blow on the abdomen with a crow-bar.

DR. C. H. HOLLAND, of Chattanooga, reported a case of

PHLEGMONOUS ABSCESS

occurring in a man twenty-five years old.

DR. J. H. ATLEE, of Chattanooga, reported a

CASE OF OVARIOTOMY.

In May, 1889, he was called to see Mrs. L., white, aged twenty-one years; married for two years without issue. Menstruation began at the age of fourteen years, and was regular. Immediately after marriage she noticed an enlargement in the left side of her abdomen, which gradually increased until it became so large as to impede locomotion and interfere with respiration.

Dr. Atlee diagnosed multilocular cyst of the left ovary, and decided to operate. Two weeks later, on the day appointed for the operation, he found her with a pulse of 120, a temperature of 103°, and very rapid respiration, and in the presence of these symptoms he thought it best not to operate. Upon the patient's solicitation Dr. Atlee performed paracentesis and drew off thirty pounds of a thick coffee-colored albuminous fluid, which presented, under the microscope, the ovarian cells of Drysdale. Ten days thereafter he removed by abdominal section a tumor weighing forty-five pounds, which in every way confirmed his diagnosis. Before removing the tumor he secured the pedicle, which was short and thick, with two ligatures, each ligature including one-half of the pedicle.

About the eighth week after the operation symptoms of cystitis, with difficult and painful urination, appeared. The urethra was found to be occluded with a foreign body which, upon removal, was identified as one of the ligatures used in tying the pedicle. About the sixth month after the operation cystitis reappeared, and gradually increased in severity until the second ligature was passed from the bladder. This ligature Dr. Atlee now has in his possession. The patient has since remained in perfect health, and is now a strong, healthy woman.

DR. FRANK TRESTER SMITH followed with a paper entitled

FLUORESCEIN IN THE DIAGNOSIS OF EYE-DISEASES.

DR. J. E. PURDON, of Cullman, Alabama, contributed a very elaborate paper on the

DYNAMICS OF MEDIUMISM,

and arrived at fifteen conclusions after a long and careful study of the subject.

DR. W. C. MAPLES, of Bellefonte, Alabama, read a paper on

SOME IRREGULAR FORMS OF EPILEPSY, WITH REPORT OF A CASE.

Dr. Maples thinks that the case reported was one of epilepsy, although in some respects it resembled hystero-epilepsy. His reasons for thinking it to be a case of epilepsy are:

1. The amount of fever. In hystero-epilepsy there is generally but little or no fever. Some authors assert that we may have a true hysterical fever, but the weight of authority is against that opinion.

2. The complete unconsciousness.

3. The biting of the tongue. Hystero-epileptics seldom or never injure themselves.

4. The facial expression and pupillary phenomena. The facial expression is generally calm and serene throughout a hystero-epileptic attack.

5. The absence of hysterical phenomena in the interval between the attacks.

6. The sex. Hystero-epilepsy rarely occurs in males.

DR. J. D. GIBSON, of Birmingham, Alabama, presented a paper on

URETHRAL STRICTURE AND ITS COMPLICATIONS.

He considers the acorn-pointed sound the most convenient and practical instrument for the detection of stricture.

Dr. Gibson said that if he were compelled to use only one instrument in the treatment of strictures, that instrument would be the sound. He believes that if it is properly used, there are very few strictures that cannot be relieved, and that the only cases in which a urethrotome is necessary are tight and unyielding strictures in the pendant urethra or at the meatus. Inexperienced men are apt to be disappointed in the use of the sound, simply because they try to go too fast; the idea should be to dilate the stricture and produce absorption, not rupture.

Internal urethrotomy, while often abused, is a potent means of treating urethral stricture, it being especially applicable to old and firm strictures in the pendulous urethra and meatus.

DR. P. S. HAYES, of Chicago, followed with a paper entitled

NOTES ON APOSTOLI'S METHOD IN THE TREATMENT OF UTERINE FIBROIDS.

He said that one of the most clearly demonstrated

facts of the Apostoli method is that by means of it all uterine hæmorrhages, not puerperal, can be arrested.

All observers recognize that the positive pole is the one to be connected with the intra-uterine electrode. The reason for this is, that in electrolysis, especially when the electrolyte—the fluid undergoing electrolysis—is blood, the clot formed around the positive pole is small and dense, while that around the negative pole is large and flabby. Knowing, as we do, that oxygen, chlorine, and the acids are liberated at the positive pole when electrolysis is performed on the tissues of the body, and also knowing that hydrogen and the alkalies are liberated at the negative pole, we have only to apply our knowledge of the action of the acids and alkalies on the blood to explain the observed phenomena.

The occurrence of uterine hæmorrhage does not contraindicate the use of the method.

One of Dr. Hayes's patients, suffering from menorrhagia, came to his office, stating that she was drenched with the discharge, the hæmorrhage having occurred when she was some distance from her home. Dr. Hayes used the intra-uterine electrode connected with the positive pole, and passed a current of from 60 to 80 milliampères for eight minutes. The patient went home, a distance of three miles, and was in bed the remainder of the day. On the next day she was about the house, and the flow had nearly ceased. This period was by far the least severe that she had had for several months, and the amount of time spent in bed was three-fourths less.

Officers for 1891.

President.—Dr. Robert Battey, Rome, Ga.

First Vice-President.—Dr. E. T. Camp, Gadsden, Ala.

Second Vice-President.—Dr. Richard Douglas, Nashville, Tenn.

Third Vice-President.—Dr. D. H. Howell, Atlanta, Ga.

Secretary.—Dr. Frank Trester Smith, Chattanooga, Tenn.

Treasurer.—Dr. S. B. Wert, Chattanooga, Tenn.

On motion, the Association adjourned to meet in Chattanooga, Tenn.

THE NEW YORK SOCIETY OF MEDICAL JURISPRUDENCE.

Stated Meeting, November 10, 1890.

THE PRESIDENT, LANDON CARTER GRAY, M.D., IN THE CHAIR.

DR. E. C. SPITZKA read

A REPORT ON THE EXECUTION OF WILLIAM KEMMLER.

After alluding to the fact that the New York Society of Medical Jurisprudence had taken the first steps to bring about a reform in the methods of capital punishment, which had led rather prematurely to the passage of the law establishing electrothanasia as a substitute for hanging, Dr. Spitzka said that the chief objection to this new mode of execution is the complicated machinery necessary. He then vividly described the execution of Kemmler, already too familiar to the general public in many of its details, in order to show the favorable, as well as the unfavorable factors which entered into this particular case. He has witnessed a number of hangings, but never before was he unable to recognize at once the condemned one, by his appearance or demeanor. Kemmler's manner was so calm and yielding that it was indeed necessary for the warden to introduce him to the assembled witnesses.

After quoting Kemmler's last words, which he said had been correctly reported only by Dr. Carlos Macdonald, he described how the doomed man assisted in the preliminary arrangements, including the application of the electrodes. When the awful moment came, his body was thrown into a tetanic spasm, and, in the speaker's opinion, death occurred in an infinitesimal part of a second. The spasm lasted for the seventeen seconds during which the current was applied, and involved every muscular fibril, so that there was not only rigidity, but also quivering. The violence was so great that it would be easy to believe, that were it not for the secure manner in which the man was fastened to the chair, the tremendous force of the muscular contractions would have caused many fractures.

During the first application of the current, a peculiar pallor appeared on the man's scalp and spread down to the head-band, and the intense purplish congestion of the capillaries which surround the naso-labial fold showed distinct post-mortem hypostatic congestion, bounded by a serrated line. When this congestion appeared Dr. Spitzka announced that the man was dead. Up to this time, of course, no one had dared to feel the pulse, or make an examination of the body by touch. It was evident that the other witnesses also considered the man dead, for they gathered around the table, and prepared to sign the legal document as required by law.

At this time the victim's pulse was absent, the pupils were insensible to light, and one cornea was flaccid. The marks of his suspenders, and of every fold in his clothing, were traced upon his body in a singular manner. During the muscular spasm the thumb of one hand was driven into the finger, and when blood oozed from this wound one of the witnesses exclaimed that life was returning. This immediately produced a panic among the spectators, and Dr. Spitzka, as he himself says, made the great mistake of ordering the current turned on a second time. Again the body was convulsed, but the contractions were more like those seen in a galvanized frog when the contractility is becoming exhausted. At the time Kemmler met his death it was probable that he was in a state of "expectant inspiration;" hence the bubbling of air through the thick mucus which had collected in the mouth.

In cases of death by powerful electrical currents, or by lightning, the fluidity of the blood has been commented on, and it is well known that under such circumstances bleeding from an incised wound is no proof that life is not extinct. Dr. Spitzka thought that such a phenomenon could be reproduced even as late as the fourth or fifth day after death. His examination made after the final cessation of the current, showed the absence of the tendon and pupillary reflexes, and the hypostatic congestions already noted. Seven or eight seconds after the cessation of the current there were repeated explosions of intestinal flatus, followed in a few seconds by a profuse flow of urine. After the first application of the cur-

rent there was an erection of the penis and an emission of semen. The erection seemed to be produced by the erector muscles rather than by the turgidity of the blood-vessels.

Dr. Spitzka said that his object in bringing this subject before the Society was to direct particular attention to the uncertainty of all the usually-accepted signs of death. In the examination just mentioned he found that on touching the convict's ear it became pale, but on relinquishing his grasp the color immediately returned. This phenomenon has been made the subject of a successful prize essay, in which it was stated that the absence of the sign is positive proof of death. Yet after this man's body had been completely dissected, and the lungs, heart, intestines, brain, and spinal cord entirely removed, the phenomenon was repeatedly observed. He has observed the same thing in a few other cases in which he made an examination very soon after death. In the present instance the fluidity of the blood might partially explain the persistence of this phenomenon.

In speaking of the arrangements of the apparatus at the Auburn prison the author criticised quite severely the placing of the switches, and especially of the volt-meter in a room separate from the execution-chamber, thus making it impossible for the official physicians to observe the voltage of the current. On this occasion the volt-meter did not work properly, and he believed it was not intended that it should do so; for at trials both before and after the execution, it failed to work well for more than a few moments. The only way the physicians could judge of the condition of the current was by the appearance of the incandescent lights.

As is well known, much opposition has been raised against the execution by electricity on account of the State's selection of the dynamo of a particular corporation. It is worthy of note that the first accidental death by powerful electric current, occurred in Buffalo three or four years ago with a current from a Brush machine; and it would have seemed natural for the State to select the machine which had first so unfortunately demonstrated its ability to kill. The State should have but one plant, centrally located, and provided with a dynamo especially constructed for the purpose, and capable of generating a current of about 3000 volts. This machinery should be under the charge of a thoroughly competent electrical expert. The neurologist or ordinary medical man knows very little about these powerful currents, and should only direct the selection and proper application of the electrodes. Dr. Spitzka said that a collar electrode could be so constructed that it would hold the victim firmly without strangling him, and while securing better contact and easier application than the head electrode, would avoid the only preliminary to which Kemmler objected—the shaving of the scalp. The spinal electrode is even worse than the head electrode. It is unnecessary to test the resistance of the convict's body before the execution. All that is required is to employ the highest obtainable voltage and to apply it for a brief period. This would lessen the probability of burning, avoid the revolting spectacle of convulsions long after life is extinct, and would convince the public that death was instantaneous. The great cost of this method of capital punishment will probably prevent its introduction into other States.

Notwithstanding the disadvantages mentioned, Dr. Spitzka said that the execution of Kemmler was a more decent and dignified vindication of the law than the cases of hanging that he had witnessed.

In view of the part taken by the Society of Medical Jurisprudence in this matter of reform in the execution of the death penalty, Dr. Spitzka thought it might justly claim to be in the advance guard of forensic medical progress.

In discussion, DR. CARLOS MACDONALD, who prepared the official report at the request of the Governor, said that he had but little to add to Dr. Spitzka's report. In criticising the medical witnesses of this execution, it should be remembered that their advice was sought in regard to only one matter—the duration of the application of the current; and that even about so important a matter as the application of the electrodes, they were not consulted. At the preliminary tests made some months previously to the execution, it was decided to use a helmet electrode, and also a form of chair which had been recommended by Dr. Macdonald; but for some unknown reason both of these decisions were changed. He considered the discarding of the helmet electrode a mistake, as experiments on animals have shown that the most effectual mode of application was through an electrode embracing the frontal region. The great error had been in not continuing the current a little longer, remembering that the probable voltage was not nearly so great as had been intended. It probably did not exceed 700 volts; while, judging from experiments on animals, it should have been 1000. He believed that with proper contact, such a current, if applied for from fifteen to twenty seconds, would invariably cause instant death. He went into the switch-room in the Auburn prison in the interval between the applications of the current, not knowing that it was against orders, and found the incandescent lamps burning dimly. He recognized Mr. Davis in the room, and asked him, "What is the matter with your current?" to which Mr. Davis replied, "There is something wrong down at the dynamo." He had no time to make further inquiries, for he was sent out of the room. He believed that if contact had been maintained five seconds longer in the case of Kemmler, no muscular movements would have been observed.

DR. SACHS spoke of the execution as a "scientific experiment," for the resistance of the body varies so enormously in different subjects, and in the same subject at different times, that there is necessarily the greatest uncertainty as to the results. The Commission appointed to investigate these points, did not consider the differences between the lower animals and human beings, and consequently their conclusions were mere guesswork. He was, therefore, surprised that the execution proved so successful.

The President, DR. GRAY, also spoke of resistance, and endorsed the views of the preceding speaker. He thought that in addition to these elements of uncertainty, there was another obstacle—*i.e.*, the difficulty which would be encountered if the condemned man should struggle or resist.

The HON. WILLIAM BARNES thought that struggling would finally lead to the abandonment of electrothanasia for a method with fewer uncertainties; such, for instance, as the guillotine.

DR. N. S. BRILL, whose paper originally led to the reform in executions, said that there was less danger of bungling with electrothanasia, when carried out according to the suggestions already laid down, than there was in hanging; and the former had the additional advantage that the execution was constantly under the control of the executioner to the time of the victim's death, while in hanging, the executioner, after springing the drop, has no control whatever.

CORRESPONDENCE.

"RHUS POISONING."

To the Editor of THE MEDICAL NEWS,

SIR: Under the head of "Hospital Notes" in your issue of October 25, 1890, I notice a method of treatment advised for "Rhus Poisoning." I have had a very large experience with this form of dermatitis and have never seen the application of "lotio nigra" fail in any stage of the disease. This was suggested to me by Harold Williams, M.D., of Boston. The part or parts may be freely bathed with black wash or wrapped in absorbent wool or cotton previously soaked in the solution. Immediate relief of subjective symptoms follows and the objective signs rapidly disappear. I have never seen untoward symptoms. The only objection to the treatment is, that *the physician makes but one visit.*

J. ALBAN KITE, M.D.

NANTUCKET, MASS.

NEWS ITEMS.

The Hot-air Clinique of Paris.—A clinique was recently opened in the *Rue de la Chaussée d'Antin*, Paris, for the hot-air treatment of consumptives. Here men, women, and children who have phthisis or are predisposed to it may be treated free of charge. Ranged around the walls of the establishment are a number of small tables, on each of which stands an apparatus for heating the air by means of a large spirit-lamp. From each of the reservoirs issues a rubber tube terminating in a mouthpiece, through which the patients inhale the heated air. The mouthpiece is double-valved, so that the expired air passes out without mingling with that delivered by the apparatus.

The Study of Medicine in Thibet.—The Buddhist Lamas' University, in the Transbaikal Province of Thibet, has a medical course of ten years. According to *Nature*, a traveller named Ptitsyn has returned from that country with a collection of medical books and drugs illustrative of the knowledge and the methods of practice in Thibet. Mr. Ptitsyn remarks that he has found over one hundred diseases described in the Buddhist literature, and of these a mythical origin is ascribed to only two. Strictly medical subjects are not studied until the fifth year of the course, the first four years being devoted to the study of the languages and theology. The eighth year is devoted to astrology, and philosophy is studied in the last two years.

Liabilities of Patients.—Mr. A. M. Hurlock, an attorney of Baltimore, is engaged in an attempt to get a bill through the Legislature of Maryland, which shall render a married woman's estate liable for medical services rendered to herself or to her children. Every now and then rich or well-to-do women with worthless husbands obtain under the present law the medical services of the doctor without compensation, and we think that a law such as proposed will materially help in stopping one of the leaks which wastes the stream of nutrition running into the lean professional purse. We trust that he may be successful, and that his example may prove contagious. The principal section of the proposed bill is as follows:

Section 1. *Be it enacted by the General Assembly of Maryland*, That married women shall be jointly liable with their husbands for medical services rendered to such married women or their children, that they may be sued jointly with their husbands for such services, and that judgments obtained in such suits may be a lien on their separate property.

American Academy of Medicine.—The Constitution was altered at the last annual meeting so as to admit, in addition to those possessing the degrees of A. B. and A. M., those who can present evidences of preparatory liberal education equivalent to the same.

Dr. J. E. Emerson, Detroit, Michigan, Chairman of Committee on Eligible Fellows, will forward to any applicant copies of the amended Constitution and By-Laws, List of Members, and other information as to the Academy.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 11 TO NOVEMBER 17, 1890.

By direction of the Acting Secretary of War, leave of absence for three months is granted CHARLES M. GANDY, *Captain and Assistant Surgeon*, Fort Clark, Texas.—Par. 10, *S. O. 266, Headquarters of the Army, A. G. O.*, November 15, 1890.

WALKER, FREEMAN V., *First Lieutenant and Assistant Surgeon* (Fort D. A. Russell, Wyoming).—Is granted leave of absence for one month, to take effect on or about the 15th instant.—Par. 3, *S. O. 85, Department of the Platte*, November 11, 1890.

By direction of the Secretary of War, the leave of absence granted STEVENS G. COWDREY, *Major and Surgeon*, in Special Orders No. 112, Department of Arizona, October 24, 1890, is extended fifteen days.—*S O. 163, Headquarters of the Army, A. G. O., Washington*, November 10, 1890.

By direction of the Secretary of War, the extension of leave of absence on account of sickness, granted HENRY MCELDERRY, *Major and Surgeon*, in Special Orders No. 214, September 12, 1890, from this office, is further extended two months, on surgeon's certificate of disability.—Par. 28, *S. O. 263, A. G. O.*, November 10, 1890.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 15, 1890.

OWENS, THOMAS, *Surgeon.*—Ordered to the Museum of Hygiene at Washington, D. C.

MARTIN, H. M., *Surgeon.*—Detached from the Receiving-ship "Wabash," and ordered before Retiring Board.

RIXEY, P. M., *Surgeon.*—Continued in charge of Naval Dispensary at Washington, D. C., until November 20, 1890.

GREEN, E. H., *Passed Assistant Surgeon.*—Promoted to Surgeon, November 10, 1890.

SMITH, HOWARD, *Surgeon.*—Placed on the Retired List, November 10, 1890.